Work Plan for

Brownfields Site Investigation/ Remedial Alternatives Report Village of Cattaraugus Environmental Restoration Program Project For the Bush Site Number: E905029

Prepared for:

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A1.0 INTRODUCTION

This document presents details of a work plan designed to support a site investigation and remedial alternatives report (SI/RAR) at the former Bush Industries Site located in the Village of Cattaraugus, Cattaraugus County, New York **(Figure 1)**. The Village of Cattaraugus has contracted Panamerican Environmental, Inc. (PEI) and its teaming partner URS Corporation (URS) to conduct a site investigation and remedial analysis program for the site. The goal of the project is to complete focused environmental investigations as part of the New York State Department of Environmental Protection (DEC) Environmental Restoration Program (ERP -under the 1996 Clean Water/Clean Air Bond Act ECL Article 56 - 6NYCRR 375-4) to accurately assess the potential for contamination, if any, its source and nature and extent and to develop sufficient data that supports the development of long-term remedial alternatives and/or the completion of an IRM at the site. This plan has been developed using NYSDEC Draft DER-10 Technical Guidance for site Investigation and Remediation, December 2002.

The purpose of the site assessment will be to verify that material disposed on the property is limited to C&D debris and to further determine the likelihood of contamination associated with past commercial use and past petroleum use on portions of the property. This information will allow the identification and screening of various technologies for their capability to meet specific cleanup and redevelopment concept plan objectives. The objective is to minimize or eliminate impacts from the property that effect the potential re-use of the property. As such, the scope of the investigations and/or remediation will be tailored to the future use of the site.

Since it is unknown if any significant contamination exists at this property, the initial investigation will be a field characterization to determine if any contamination is present at the site at levels that indicate the need for a further remedial investigation. Sampling will be biased to suspected location of greatest potential contamination. Samples will be biased based on professional judgement, geophysical results, area history, discolored soil, field instrumentation, odor, drainage patterns, or other field indicators

A1.1 Site History and Description

In January 2004, A Phase I Environmental Site Assessment (ESA) was completed on the property for the Village. An asbestos survey was completed in June 2004. No other environmental or analytical data exists relative to the property.

The property is the location of the former Setter Brothers/Bush Industries property, located at 1 North Main Street in the Town of New Albion, Village of Cattaraugus, Cattaraugus County, New York. Vacant since about 1989, the property consists of approximately 4.43-acres and is currently owned by the Village of Cattaraugus. The property contains the

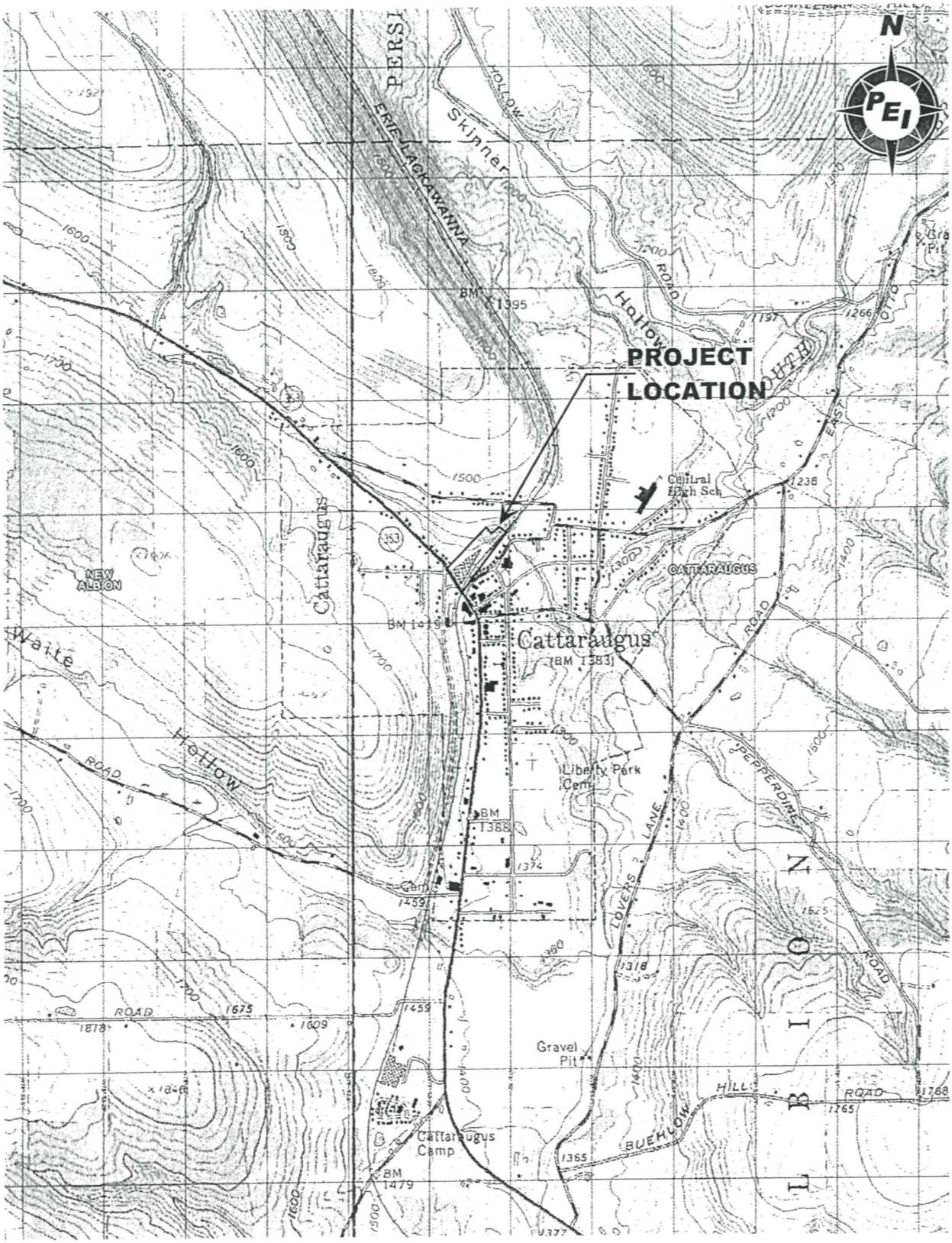

Figure 1. Project area on a topographic map. *(USGS 7.5' Quadrangle).*

remnants of a 1 and 2-story masonry, steel frame, wood and brick former manufacturing facility which has been mostly demolished. Currently there is a partial steel beam shell and building debris consisting of wood, some steel, concrete and brick across much of the former facility area. The former concrete slab foundation covers much of the former footprint of the facility to and immediately adjacent to Main Street. The manufacturing facility was constructed around 1900 with several additions added over time. The gross floor space was estimated by an appraiser in 1995 to be approximately 100,000 square feet. Various other structures and portions of former buildings are also located on this property. Historical maps of the property indicate that a Standard Oil facility, an apple evaporator, and gasoline service were also formerly associated with portions of the property. Nothing is left on the surface of the site relative to these former uses.

The property is slightly irregular in shape and is located on the east side of and fronts on Main Street (**Figure 2**). The northern and northeastern border of the property descends gradually, then at an increasingly greater slope to a very steep slope into a ravine to a creek bed/floodway. This is a branch of Cattaraugus Creek that winds along the eastern-northeastern border of the parcel. The Property appears to have been filled along the steep slope and construction and demolition debris was observed in the side banks of the slope and on the surface over the bank towards the creek. The property is bordered to the south-southwest by a rail line. Concrete and asphalt parking areas (former facility cement floor)are located along the western portions of the property (the side of the property along Main Street) and fill material was observed in the grassy northern and eastern portions of the property. The remainder of the property is grass/weed covered with some bare spots and fill areas consisting of stone, crushed concrete and brick, asphalt and other C&D materials.

Prior to the Village retaining ownership, the 4.43-acre property was most recently owned by Edward J. Dill who partially demolished most of the buildings. The owner previous to Mr. Dill was Bush Industries and thus this property is referred to as the former Bush Industries Site. The structures are mostly demolished and includes portions which have been fire damaged. Various chemicals, including glues, acids, and solvents may be associated with the former manufacturing at this location (based only on property use). Also, herbicides and polycyclic aromatic hydrocarbons are typically associated with rail spurs, which were located on and adjacent to the subject property.

The site, which had commercial operations since the early 1900's, was the location of a former manufacturer of poster boards, lumber, wooden candy sticks and meat skewers, architectural plywood, veneer, and the production of Armorply (which is a laminate of two products, primarily plywood and metal glued together). The original facility was part of the Setter Brothers Company, manufactures of veneers, engraving boards, and skewers and later was associated with various companies including The American Panel Company; The Cattaraugus Face Veneer Company, Inc. and others. Of specific interest, however, is that prior to the Setter Brothers facility, a Standard Oil Company facility including petroleum tanks was located on the front (western) part of the property closest to Main Street.

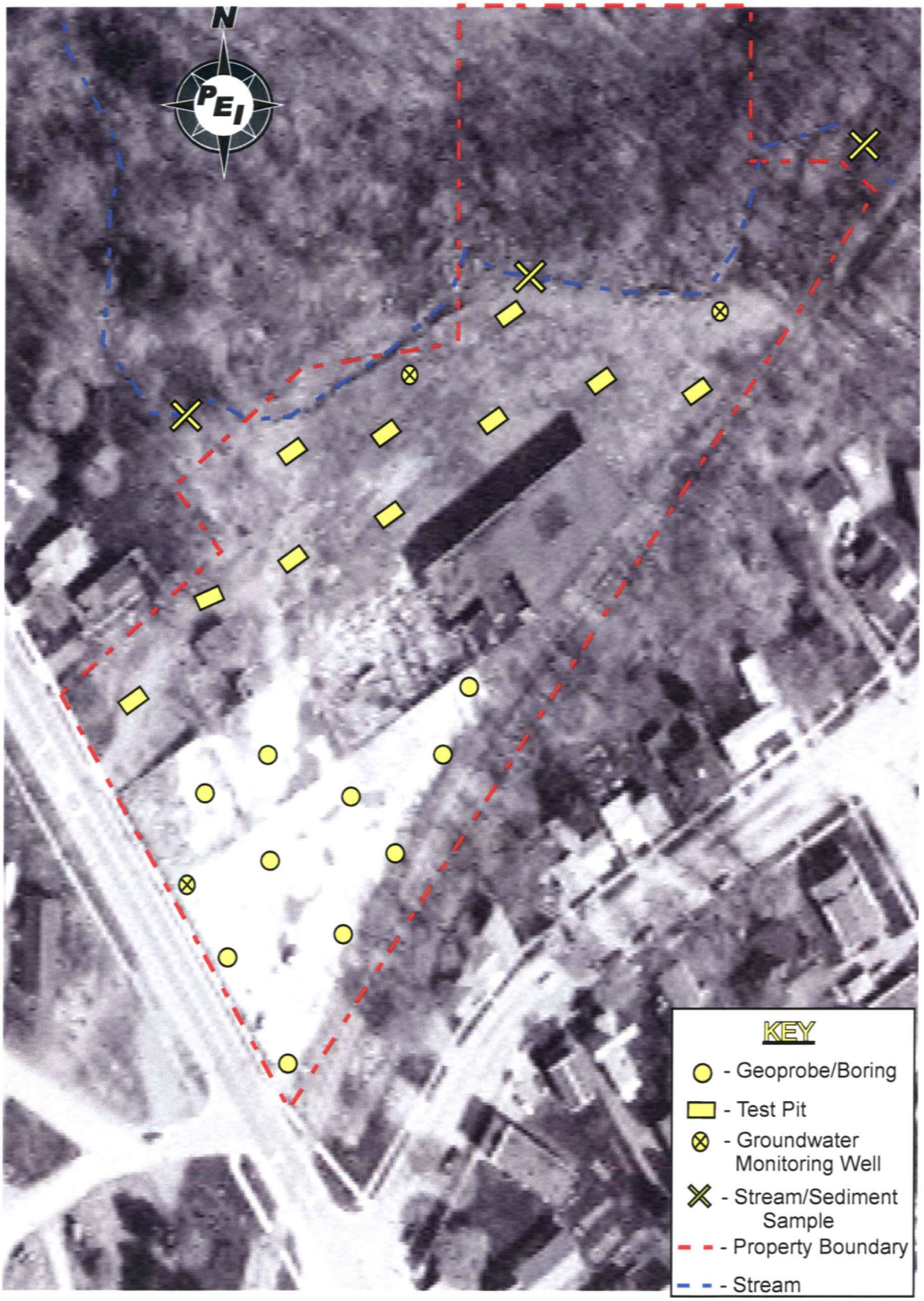

Figure 2. Potential Sample Locations - Bush Industries Site

A review of historic photographs, maps and records indicate that the current structure and property have been altered over time. The main structure, Setter Brothers Plant 3, was reportedly constructed in 1919 under the name Cattaraugus Face Veneer Company, Inc. on the site of the old Mason-Materman Evaporating Company. Prior to this date historic maps show the Standard Oil Facility and oil tanks and an Apple Evaporator on the western portion of the property near Main Street. The 1924 Sanborn map shows the Standard Oil Facility with multiple tanks occupying the western portion of the property and Setter Brothers Plant 3 occupying the southeastern portion of the property and the former location of the apple evaporator. Plant 3 eventually expanded towards Main Street encompassing the area that had been Standard Oil. In 1953, Plant 3 was remodeled and modernized for the manufacturing of architectural hardwood plywood until the business was phased out in 1965 and Armorply panels were then manufactured during the late 1960's and 1970's.

A garage and a storage facility for tire vulcanizing was also located on the southwestern portion of the property as early as 1924. Vulcanization is the process of treating rubber or rubberlike materials with sulphur at great heat to improve elasticity and strength or to harden them. This was typically part of tire re-treading started in the 1920's which led to the growth of the retreading industry. Contaminants associated with this process include benzene and other petroleum compounds, sulfur compounds, carbon black, and heavy metals. Underground storage tanks are indicated near this garage and tire facility during the early 1940's.

Rubble from the Plant 3 structures are currently located on the former plant facility footprint. The concrete flooring/pad foundation cover much of the area from Main Street east along the southern and central portion of the property. The northeastern and eastern portion of the property is currently a grass/weed covered lot containing fill. A pile of material including roofing materials is located in the northwestern portion of the property adjacent to Main Street. Materials observed on the surface of this pile included brick, metal piping, concrete, roofing materials, asphalt, backer board and other various C&D materials. This material was most likely piled during demolition.

Various piles of concrete, asphalt, crushed brick, wooden materials, and other miscellaneous C&D debris are located on the slope leading to the creek on the northern and eastern portion of the property. As described, the material appears to be rubble from former structures or possibly random dumping from off-site sources. A special meeting of the Cattaraugus Village Board was held on October 27, 2003. Minutes of this meeting indicate that debris from the Route 353 project may have been dumped in the back of the subject property.

Historically, land use in the area has been commercial/retail and residential properties. The subject property is located in an area currently zoned "I" - Industrial District and is surrounded by small commercial and retail businesses, and residential homes (both single and multi-family). Adjacent properties include: railroad tracks, residential units and the commercial/retail areas of the Village of Cattaraugus are located to the south of the property; single and multi-family homes are located to the north-northeast; Main Street (Route 353)

and residential structures are located to the west; and a tributary of the Southern Branch of Cattaraugus Creek and residential homes are located to the east-northeast of the property.

The subject property (Overhead Door Company) was listed as a RCRIS Small Quantity Generator and listed in the Federal FINDS database. This listing was for minor violations associated with the generation of hazardous waste on the property, but were resolved within a short period of time. The listing however, suggests that regulated wastes were associated with the facility.

The Phase I identified potential recognized environmental conditions in connection with the subject property including the following: its history of petroleum use/storage in aboveground and belowground storage tanks; the use and storage of various chemicals including glues, acids, and solvents for laminates and veneers and small quantity generator status; dumping of fill and C&D materials in various locations and along the slope to the creek; and the possibility of other materials/chemicals associated with other process on portion of the property (tire vulcanization).

A1.2 Organization

PEI/URS propose to complete a series of tasks as described below. The primary intent of this program is to verify that material disposed on the property is limited to C&D debris and to further determine the likelihood of contamination associated with past commercial use and past petroleum use on portions of the property. .

PEI/URS has prepared a Work Plan, a Quality Assurance/Quality Control (QA/QC) plan, a Field Sampling Plan (FSP), and a Health and Safety Plan (HASP). These plans are being submitted as one document which defines the total scope, technical approach, and procedures to be utilized in the completion of the Site Investigation/Remedial Program.

Part A: Work Plan - provides a brief site description of the project, project outline, staffing plan, and description of individual tasks that will be completed under this work assignment.
Part B: Quality Assurance/Quality Control Plan - provides the Quality Assurance/Quality Control (QA/QC) programs which will ensure the quality of data and the ultimate defensibility of information produced during this project.
Part C: Field Sampling Plan (FSP) - provides procedures and guidance for all field sampling/investigative programs.
Part D: Health and Safety Plan (HSP) - provides site-specific guidelines and procedures to protect the health and safety of workers and nearby residents at this site.

Part E: Citizen Participation Plan Elements

A1.3 Project Personnel & Subcontractors

Project Manager - John B. Berry, P.E.
Project Geologists - Bob Henschel and Justin Ryszkiewicz
Project Health and Safety - Peter J. Gorton, CHCM
Project QA/QC - Robert Henschel, PG

Analytical Laboratory - To be named
Excavation subcontractor - To be named

A2.0 TASK DESCRIPTION

The text of this section describes the logistical steps and activities to be followed in completion of this program while the supporting Field Sampling Plan (Section C) presents the technical methods (protocols) to be used during the investigation activities. The protocols consist of procedural directives to guide the field staff during these facets of the program. They ensure uniformity of procedures, provide descriptions of test methods and techniques, and serve as a means of quality control. The Quality Assurance Project Plan (Section B) describes chemical QA/QC programs that will ensure the quality and defensibility of the data.

Data needs include:

- Determining the level and extent of investigations which will provide sufficient data to characterize the site and allow for development of possible IRMs and appropriate remedial alternatives acceptable to NYSDEC/NYSDOH and other involved agencies.
- Performing a site boundary and topographic survey as required by the State Assistance Contract, to identify existing conditions and to create a base map for field activities.
- Verifying that the subsurface does not contain any underground storage tanks (USTs) or remnant petroleum contamination from previous occupants of the property by geophysical methods.
- Verifying subsurface fill conditions and examining visible C&D debris by advancing a series of test trenches and/or Geoprobe borings at selected locations across the property.
- Analyzing specific media including soil and groundwater to identify the contaminants of concern, if any, and potential pathways and affected receptors, if any, based on those contaminants of concern..
- Determining if the site has any issues associated with wetlands and surface water
- Identifying any impacts to future development plans and developing realistic cleanup goals and remedial alternatives to achieve the desired cleanup levels for that development

A phased assessment approach is planned for this site. The first phase will be limited in

scope to determine if the possibility of contamination exists (examine "hot spots"). If contamination is identified, a more focused investigation will be conducted based on the findings of the initial phase. **Specific tasks for the first step investigation include** a topographic boundary survey, wetlands assessment, surficial debris inventory, geophysical survey, surface and subsurface soil sampling, surface water/sediment sampling, and a limited groundwater investigation program. **A presumptive IRM which includes removal of the remaining building debris along with any petroleum contamination, should it exist, will be examined. At the end of the SI, an initial review of remedial alternatives will be completed to determine their applicability to meet the goals of the potential IRM and to determine if any additional remedies beyond the IRM are required.**

WORK ELEMENT I - SITE INVESTIGATION

Specific tasks include:

- Perform a site boundary and topographic survey to identify existing conditions and to create a base map for field activities. This will satisfy item #5 of the DEC requested information (*Checklist for Documents to Be Submitted with Signed State Assistance Contract*).
- Verify that the subsurface does not contain any storage tanks, or remnant petroleum contamination from the above ground Standard Oil Tanks or the USTs thru the use of a geophysical survey followed by subsurface borings thru the existing cement floors
- Assess fill conditions thru visual inventory, geophysical survey and by advancing a series of test trenches and/or Geoprobe borings at specific defined locations across the property to verify subsurface conditions and C&D debris,
- Complete a stream and wetlands survey
- Install a limited number of groundwater wells
- Analyze specific media including soil, groundwater, and sediments
- Collect background soil and surface water/sediment samples
- identify the contaminants of concern, if any
- identify specific environmental media, potential migration pathways and affected receptors, if any
- identify potential impacts to conceptual development plan
- identify extent of remediation necessary, if any, to meet the property specific re-development goals.

A2.1 Site Boundary and Topographic Survey

Topographic and Boundary Survey

DEC requires that a survey of the property has been completed by a licensed surveyor and that a survey endorsement exists within the past 3 months, unless the survey is dated within the past year. If it is established that no topographic and/or boundary survey maps are

available for the site meeting these requirements, then a site map will be generated. The map will be completed in accordance with best engineering practice, and will be prepared under the direct supervision of a NYS-licensed land surveyor. The survey will be accomplished in two steps. First a base map will be developed. Second, after field work is completed, all sample locations and well locations associated with the investigation will be surveyed and shown on the map.

The area to be surveyed will include the entire parcel. A two person crew equipped with digital GPS equipment will be utilized to collect the field data. This project shall be referenced to the New York State Plane Coordinate System West Zone North American Datum of 1983 (NAD83) as a basis of horizontal control and North American Vertical Datum of 1988 (NAVD88) as a basis of vertical control. The two main aspects of this project Topographic and Boundary surveys will be accomplished in the following manner:

Boundary Survey: The required title research to complete a boundary survey to the specification outlined by the New York State Association of Professional Land Surveyors and as further enhanced by the Niagara Frontier Land Surveyors Association will be completed. This research will be completed using records acquired from sources such as the Village and/or County Clerk's Office and local area surveyors. Once completed, the final exterior boundary will be monumented with irons pins at the corners where none exist. All of the title information and recovered and set corner monuments will then be incorporated onto a final map. This map will indicate the boundary lines with all existing buildings, fences, and other key site features and boundary analysis data.

Topographic Survey: A topographic survey shall be accomplished for the entire site. Additionally, elevation shots will be taken approximately 25 feet outside of the property to facilitate any drainage design. Additional shots may be required depending upon actual field conditions. The overall topographic survey shall be completed to a scale the same as the boundary survey and incorporated onto the same mapping. All drainage and above ground features will be included on this mapping. Ditches, drainage features, utility and manmade improvements will be noted. The base map will be prepared with a minimum two foot contour interval for the property.

Site Grid Layout: During the site survey, a 100' grid will be established for use in inventorying the onsite debris and for locating test trenches.

A2.2 Wetlands

The objective of this task is to determine if wetlands exist on or adjacent to the property and if they impact site re-development based on state or federal jurisdictions/guidance. Wetland mitigation may be appropriate based on the proposed remediation alternative. Activities associated with stream/wetland issues includes initial data review, followed by field work. Prior to performing the field work, available maps and photography obtained during the Phase I will be reviewed including: The National Wetland Inventory (NWI) map (if

available) and the New York State Department of Environmental Conservation (NYSDEC) freshwater wetland map for the project area; The Cattaraugus County USDA Soil Survey maps; USGS topographic map; and Property maps as may be available depicting the location of the site.

After this review, a one-day field survey will be completed. Wetland delineations, as appropriate, will be performed using the routine 1987 U.S. Army Corps of Engineers (Corps) three-parameter approach. For each suspected wetland, appropriate Corps data forms will be completed and representative photographs will be taken. Field data forms will be used to record relevant information concerning the wetland(s) and stream on the property. Information recorded will include soils (as applicable, given the potentially disturbed conditions), hydrologic conditions, vegetation characteristics, and general habitat function/value. Photographs will be taken to document wetland/stream conditions, and numbered flags hung in the field to identify the wetland boundaries, as applicable. The project team will identify potential site remediation strategies incorporating the stream corridor, as appropriate.

A2.3 Surface and Subsurface Assessment

A2.3.1 Surficial Debris Inventory

As noted, portions of the site contain piles/layers of C&D debris. This task will involve the visual examination, characterization and inventory of potential waste materials, and identification of stains and spills, onsite. To accomplish this task in an efficient manner, the PEI/URS team will start at one end of the site and progress in an orderly fashion across the facility to ensure that all debris piles have been examined. Initially, the site will be divided into grids using the base map prepared for the site. A series of stakes will be set-out in the field at the grid intersection points during the survey of the site. Each grid will be identified by an alphanumeric designation (e.g. A1, A2, etc.). The grids will also be used to locate test trench locations.

The debris located within each grid will be visually examined and the observations recorded in a field notebook. A photographic record of the debris in each grid also will be maintained. PEI/URS will prepare a spreadsheet identifying the type and quantity of debris present in each grid. This will provide the Village with an inventory and estimated quantity of materials of potential concern for remediation and/or for a demolition contractor. Based on the results of this task, a follow-up sampling program will be developed, as necessary for disposal characterization. This information also will be utilized to identify materials that may need to be cleared during final site re-development.

A2.3.2 Geophysical Survey

A geophysical survey will be conducted across the site in the areas not cover by debris or buildings. The focus will be on the area of the former gas station and Standard oil facility and on the fill area to the north of the present building foundations. Anomalies will be

identified on a site map (possible drum/UST locations) which will be used to layout the test trenching and geoprobe programs.

A2.3.3 Surface Soil Sampling

No data exists concerning site surface soils (i.e., 0-2 inches), which is a critical data gap under the ERP program. Consequently, PEI/URS will conduct surficial sampling and analysis to obtain the data that will be necessary for development of remedial alternatives. A total of 5 surface soil samples and two background (i.e. offsite) surface soil samples will be collected. Samples representative of the various surface soil/fill conditions on site will be collected. This will include areas covered with debris, stained areas, open areas and 'clean' areas where no debris or evidence of former activities are apparent. Surface soil samples will be collected from the upper two inches or immediately below the turf layer. Samples collected for analysis will be selected in the field based on PID screening and visual observations. Samples will be submitted to a NYSDOH certified laboratory and analyzed for RCRA metals, Target Compound List (TCL) SVOCs, and PCBs. Surface soil samples will not be analyzed for either pesticides/herbicides or TCL VOCs.

Background surface soil samples will be collected. These will be collected from locations assumed to be unaffected by current or historic site operations and will be collected from locations that are topographically upgradient of contamination sources. Background samples **will not** be collected from:

- Parking lots, roads, or roadsides
- Areas where materials were loaded, handled, or stored
- Waste disposal areas
- Areas near rail roads
- Areas of historic fill
- Areas receiving runoff from potentially contaminated areas
- Storm drains or ditches
- Depositional areas from point sources
- Other areas of concern

A2.3.4 Test Trenches

The primary purpose of the subsurface assessment is to visually inspect and describe subsurface soil/fill conditions across the site and/or in suspected areas of concern. This will be accomplished using a combination of borings and test trenches (refer to Figure 2). A trackhoe will be utilized in the open areas not covered with concrete/asphalt to excavate as many test trenches as practicable in one 10-hour days. It is anticipated that about 10-12 test trenches will be excavated. The depth of excavation will be limited to: The maximum reach of the trackhoe; The top of native soil or confining layer; Encountering groundwater inflow; Top of bedrock. The use of test trenches as opposed to borings will afford the following: the ability to examine C&D debris and a wider subsurface area and soil/fill profile; and the ability to gain access to areas inaccessible to drill rigs. Conversely, a Geoprobe will be

utilized in the areas of the site that are covered with cement from the old structural flooring (south-southwest area). This is proposed so as to limit disturbance to the areas currently used for parking.

The locations of the trenches are subject to accessibility and the location of any underground utility lines. All trenches will be advanced at a minimum distance of 2.5 feet away from marked utilities, where present, to reduce the possibility of accidentally damaging an underground line.

The primary purpose of the subsurface assessment is to visually inspect and describe subsurface conditions across the investigation area. At each test pit the following will be performed:

- The depth of the cover soil/fill will be assessed
- The depth to native soil will be assessed
- Depth to bedrock, if encountered, and integrity, weathered, type, etc. will be documented
- Depth to water table, if encountered
- Any visual evidence of contamination and/or elevated PID readings will be recorded.

Materials in each debris pile and soil from each slit-trench (approx. 1 foot wide by 4-8 feet long) will be visually examined, logged by a geologist, and screened using an organic vapor detector (i.e., photoionization detector - PID). Stratification of material in the trenches and observations of soil staining will be noted on the trench logs. A field geologist will log all trenches and perform visual, and field screening of the test pits for volatile organic compound (VOC) concentrations using a PID. Soil samples will be collected from each test trench from the intervals which exhibit potential contamination either through visual, olfactory, or PID readings. A subset of five discrete soil samples will be selected for laboratory analysis for TCL VOCs, SVOCs, PCBs and RCRA metals. These samples will be chosen from the test trenches which indicate the highest potential for contamination based on visual, olfactory, and screening information. Samples will not be composited. Alternatively, if no evidence of contamination is observed, samples may be collected from different depths to profile the soil/fill materials vertically. The actual number and type of samples collected will be determined after final project scoping and in the field in conjunction with the Village and NYSDEC representative. The backhoe will be set up and operated in accordance with standard practices and in a manner that will ensure the safe and efficient operation of the equipment. Hydraulic system leaks, as well as lubricant and fuel leaks, will be eliminated or prevented. Safety considerations during equipment operation are addressed in the HSP.

All trenches/borings will be filled with indigenous soil upon completion in the order in which it was removed. The excavation equipment will be decontaminated after completion of each test trench. The bucket will be pressure washed over each trench to remove any soil/fill materials. The wash water will be discharged onto the soil/fill backfill and allowed

to infiltrate into the test trench.

In addition to installing monitoring wells (described below), in order to collect additional data on groundwater levels across the site, temporary piezometers consisting of a one-inch diameter PVC standpipe equipped with a 2-foot long slotted screen section will be installed in selected test trenches (i.e. those exhibiting an inflow of groundwater). **This is an inexpensive technique which will provide additional data in an efficient manner.** The standpipe will be positioned in the corner of the test trench prior to backfilling. The location and elevation of the temporary piezometers will be surveyed after installation. Along with the well data, this will allow the groundwater elevations to be determined and plotted to create a groundwater contour map.

A2.3.5 Geoprobe

So as not to disrupt current site conditions/parking in areas covered by concrete, Geoprobe borings will be used primarily in the south-southwestern portion of the property where the historic Standard Oil Facility and garage/tire vulcanizing were located. Using information from the geophysical survey, a total of 6-10 borings will be advanced to an average depth of 16 feet below ground surface using Geoprobe® direct push technology. Continuous soil sampling will be conducted using the Geoprobe® with a two-inch diameter sampler. A field geologist will log all samples and perform visual, and field screening of all core samples for volatile organic compound (VOC) concentrations using a PID. A maximum of 2 discrete soil samples will be selected from the borings exhibiting the highest soil readings. If all results are found to be background, a sample may be selected based on field observations and or of fill material. Samples will be analyzed for the same constituents as the samples collected from test trenches and/or for USEPA Methods 8260 and 8270 (STARS) compounds to determine petroleum contamination.

The locations of the borings are subject to accessibility and the location of underground utility lines or other buried objects. The actual locations and sample frequencies for the soil survey points will be chosen based on field conditions. All borings will be advanced at a minimum distance of 2.5 feet away from marked utilities or known USTs, where present, to reduce the possibility of accidentally damaging an underground line or UST. PEI/URS will perform a utility check prior to performing subsurface activities. All probe holes will be filled with indigenous soil or clean sand. An asphalt or cement patch will be placed as appropriate.

A2.4 Sediment Sampling

PEI/URS proposes to supplement the surface/subsurface assessment with a limited number of sediment samples collected from the creek. Sampling techniques and equipment will be selected to minimize effects on the chemical and physical integrity of the sample in order to obtain a representative sample of the sediment.

A total of three (3) samples will be collected from the creek; one upstream, one adjacent to

the property; and one downstream to assess potential extent of contamination (refer to Figure 2). All sediment samples will be analyzed for SVOCs, PCBs, and RCRA metals. Sediment sample results will be compared to NYSDEC "Technical Guidance for Screening Contaminated Sediments, January 1999"(refer to PART B, Table B-1 - Analytical Summary Table).

The sampling will be accomplished by wading into the surface water body and while facing upstream (into the current), scooping the sample along the bottom of the surface water body in the upstream direction. Excess water will be removed from the scoop or spoon. The depth and thickness of the sediments will also be measured for possible use in remedial selections.

A2.5 Groundwater Program

PEI/URS propose to install a limited number of overburden wells to examine groundwater and hyrdrogeologic conditions. A total of three wells will be installed, with a minimum of one well being located upgradient and two being located downgradient of the site (refer to Figure 2). Suitable borings completed during the Geoprobe program will be converted to micro-wells. Actual well locations will be selected based on information regarding contaminants, geology, and known hydrogeologic information. Existing data from the test pit and boring programs and previous hydrogeolgic investigations in the area, if any, will be used. Final well locations will be refined as information is generated during the test trench excavation program and from the temporary piezometers. It is assumed that each well will extend to a maximum depth of 20-feet.

Based on the information obtained during the test trench excavations, it will be determined whether to utilize a Geoprobe or auger-drilling rig to install the monitoring wells. If no large obstructions or pieces of debris are observed in the soil/fill materials exposed in the test trenches, then the Geoprobe rig will be used to install mini-wells. However, if the soil/fill materials contain large amounts of debris that would preclude the use of Geoprobe drilling methods, then the auger-drilling rig will be used. Planned activities will be conducted as follows:

- Boreholes will be advanced to a maximum depth of 20 feet, the top of bedrock, two feet below the top of any confining layers, or 5 feet below the groundwater surface, whichever is less.
- Overburden soils will be continuously sampled from ground surface to the required depth using split spoon or macrocore samplers, as appropriate.
- Soil samples will be visually inspected, screened with a PID for VOCs, and logged by a PEI/URS geologist.
- The data (i.e. soil types, rock depths, groundwater depth) obtained from installation of the first boring/well will be used to guide the installation of the remaining borings/wells.
- If augers are used to advance the boring, the well will consist of a two-inch diameter, schedule 40 PVC casing equipped with a ten-foot screen and solid PVC riser pipe

extending to the surface. If Geoprobe methods are used a Mini-well consisting of a 1-inch diameter PVC pipe equipped with a 10 foot slotted screen and solid riser pipe extending to the ground surface will be installed. (The actual construction details will be adjusted in the field, as necessary, to fit field conditions).

- Screens will be positioned to straddle the groundwater surface to allow monitoring of floating product, if present.
- The annulus around the screen will be filled with filter sand to one foot above the top of the screen. A three-foot thick bentonite seal will be installed and the borehole filled to the ground surface with a cement/bentonite mix.
- A steel protective casing with keyed-alike locks will be installed to complete each installation.

Following installation, the wells will be developed in accordance with standard procedures outlined in the QA/QC Plan. For purposes of this proposal, it is assumed that the development water will be discharged directly onto the ground downgradient of the well. Permeability tests will be conducted in all wells to determine the relative permeability of the surrounding formation (i.e. rock). The procedures for the testing are presented in the QA/QC Plan. A round of groundwater readings will be obtained once the wells have stabilized. The elevation of the groundwater in each new well and the temporary piezometers will be calculated and a groundwater contour map of the site prepared. This data, combined with the permeability and site stratigraphy data, subsequently will be utilized to determine groundwater flow directions, hydraulic gradients, transmissivities, etc.

Following installation and development, the three new wells will be purged and groundwater samples collected (total of three samples). The samples will be analyzed for TCL VOCs, SVOCs, PCBs and RCRA metals. Both filtered and unfiltered samples will be analyzed to determine soluble and total metals concentrations, respectively. Filtering will be performed at the laboratory.

Site Survey

Upon completion of the investigation, the soil sample locations, trenches, monitoring wells and temporary piezometers will be surveyed for horizontal and vertical coordinates using Global Positioning Survey (GPS) techniques. The surveyed locations will be plotted on the existing base map in Auto CAD 14 format.

A2.6 Supplemental Investigations

Following completion of the initial site investigation and characterization of conditions, additional field investigations may be recommended to further evaluate remediation options.

A2.7 Site Investigation Evaluation and Reporting

After completing the site investigation, a site investigation report will be prepared summarizing all field activities and analytical results, and summarizing the findings of the

site investigation program. Copies of field data, validated analytical test results, and other relevant information will be included. The site investigation report will be limited to the following:

- Specify the contaminants of concern,
- Identify specific environmental media, potential pathways and affected receptors, if any
- Identify any impacts to the stream bank stabilization program
- Identify extent of remediation necessary, to meet the property specific needs.

Analytical Testing and Data Verification

All samples will be submitted to a NYSDOH-certified laboratory for analysis. All analytical testing will be performed in accordance with NYSDEC Analytical Services Protocol, October 2000 edition. All samples will be analyzed using SW 846 methods. Deliverables will be in accordance with ASP Category B.

A limited data verification will be performed on all samples analyzed and a data usability summary report (DUSR) will be prepared. The data verification will be limited to a review of the following criteria: Holding times; Data completeness; Comparison of surrogate, spike, and duplicate recoveries to validation criteria; Blank contamination; 10% quantitation check that reported sample results are correct; Tentatively identified compounds (TICs) will be qualified by the laboratory only; Proper sample analysis; Sample chromatogram; NYSDEC ASP Sample Preparation and Analysis Summary Forms. Where possible, discrepancies will be resolved by PEI/URS chemists (i.e., no letters will be written to the laboratory). A complete data validation is not anticipated. However, if the initial limited data audit reveals significant deviations and problems with the analytical data, PEI/URS may recommend a complete validation of the data.

Data Evaluation

Once all the data has been collected, it will be evaluated to determine whether or not the site is contaminated, and if so, to what extent. If the site is contaminated, the data will be evaluated to determine if there are any data gaps that will need to be addressed prior to development of remedial alternatives. A Second Phase, more focused site investigation will be performed, as warranted.

Preliminary Health and Environmental Risk Evaluation

Based on the data generated in the tasks above, a preliminary evaluation of the potential risk posed to human health and the environment will be performed.

The soil, sediment and groundwater sample concentrations will be compared with standards, criteria, and guidance values (SCGs) developed for the site to determine the contaminants of concern. The contaminants of concern detected in the various media will be reviewed to determine their mobility and potential risks. Potential migration pathways and receptors also will be identified. Completed exposure pathways and receptors (human and ecological) will

then be identified. Should it appear that there is a significant potential risk to either human health or the environment, then a Qualitative Risk Assessment, may be recommended for consideation.

As part of the preliminary evaluation of potential receptors, records will be reviewed to determine if there are any private or industrial wells located within a one-half mile radius of the site. Considering that the area is serviced by municipal water supply, it is not likely that any wells will be identified, however, should any be identified, a contingency plan for sampling them will be developed as necessary based on the results of the groundwater sampling at the site. If a groundwater plume is detected at the site, an assessment will be performed in conjunction with the Village and the NYSDEC to determine whether sampling of the private/industrial wells is appropriate

Preliminary Identification of Remedial Alternatives

Based on the data obtained from the first phase of the site investigation, potentially applicable remedial alternatives will be identified for the site. This task will be implemented concurrently with the site investigations, and will, out of necessity, be iterative in nature. Data from the field will be input into the development of the alternatives and in turn, the potential remedial alternatives will dictate the type of data, which needs to be collected. At the completion of the first phase site investigation, should it be determined that there are obvious data gaps which will require supplemental investigations to be performed, Remedial Investigations will be implemented.

Preliminary Data Submission

Following completion of the initial phase of field investigation and evaluation of the data, the raw data and preliminary evaluation will be discussed with the Village and NYSDEC. The intent of this preliminary evaluation will be twofold; first to define the geology/hydrogeology of the site and to determine the extent and nature of any potential contaminants. Secondly, this evaluation will be used to assess the fate and transport potential of any contaminants in addition to identifying potential receptors. **This information also will be utilized to identify potentially applicable remedial alternatives and their applicability to meet the goals of the site,** provide the basis for discussions regarding additional investigations or an IRM, and for input into the remaining sub-tasks.

A total of Four copies of the site investigation report will be submitted to the Village for distribution and review. Any comments will be incorporated, as applicable into the final site investigation report.

WORK ELEMENT II - DEVELOPMENT OF ALTERNATIVES and REMEDIAL ALTERNATIVES REPORT

A2.8 Remediation Plan

Based on review of site investigation data and meetings with the Village and NYSDEC,

PEI/URS will develop a formalized list of remedial goals and/or presumptive remedies applicable to this site. The final list will be presented in the final site investigation report.

The type of decisions which will need to be made during remediation and the data needed to support those decisions may include, but not be limited to, the following:

- Impact to local restoration efforts.
- The media to be investigated.
- Number, type and locations of samples.
- Analytical parameters and protocols.
- Toxicity of contaminants of concern, if any.
- Potentially impacted receptors and exposure pathways.
- Impact of site contamination on proposed future site use.
- Type and extent of remediation required to allow desired property use.
- Future use and cleanup goals.
- Impact on site from flood events

A brief description of the activities to be performed for the remedial effort are provided below.

IRM and Operable Units

The purpose of remedy selection is to identify and evaluate the most appropriate action for a particular contaminated site or area of that site. Based on the data review and the meetings with the Village and NYSDEC, PEI/URS will develop a formalized list of remedial goals, remedial action objectives and/or presumptive remedies applicable to this site including whether an IRM is necessary (i.e., removal of USTs and/or petroleum contamination). Also, the need to address the site in terms of operable units will be examined (i.e, partially demolished building footprint, areas of past petroleum use/contamination, etc). Section 4.1 of DER-10 will be used as a guide during this process. As mentioned, a preliminary list will be developed at the start of the investigation during the work plan stage. The goal of this stage is to identify and evaluate the most appropriate action for the Bush Site. The final list, based on the findings of the assessment, will be presented at the end of the report. **Under this task, the data generated during the site investigation will be utilized to determine the extent to which the SCGs developed for the site have been exceeded or contravened.**

A2.8.1 Identification of Remedial Goals

Under this task, the data generated during the site investigation will be utilized to determine the remedial goals for the site. For the ERP program the primary goal will be to be protective of public health and the environment given the intended use of the site. Section 4 of DER-10 will be used as the basis for remedial goals and remedy selection.

A2.8.2 Qualitative Health and Environmental Risk Assessment

Should it be determined during the site investigation that the contaminants at the site pose a significant potential risk to human health and/or the environment, then a qualitative risk assessment (RA) may be performed after approval and authorization by the Village and NYSDEC. This RA will address the potential risk associated with exposure of humans and/or wildlife to contaminated media. This RA will be based on a no-action scenario (i.e., assumed that the site will not be remediated prior to reuse). This will allow the risk associated with current conditions to be assessed.

The data collected by PEI/URS during the field investigation will be utilized in the RA to assess the potential migration pathways, identify potential chemicals of concern, and potentially exposed populations (i.e., future users, maintenance workers and other workers) and/or wildlife. The health risks will be assessed for all completed exposure pathways.

The results of the RA will be utilized in evaluating various potential remedial alternatives which might be implemented at the site to mitigate the potential health risks and to negotiate cleanup levels with DEC under the ERP program. The results of the RA will be utilized to determine whether or not the site is suitable for some other use such as light industrial and/or commercial/retail development with limited remediation, or will require some type of extensive remediation for residential use. The results will also be used in evaluating various potential remedial alternatives, which might be implemented at the site to mitigate the potential health risks and to negotiate cleanup levels with NYSDEC.

A2.8.3 Development of Alternatives

A list of media-specific (groundwater, soil/fill, air,) remedial action objectives will be developed prior to initiation of the investigation as noted above, and will be refined throughout the investigation based on the site characterization data. A comparison between site contaminants, and contaminant-specific cleanup criteria (TAGM 4046, TOGS, Division of Fish & Wildlife) will aid in the determination of the remedial action objectives. PEI/URS will develop a basis of design for the site, quantifying the media to which remedial actions might be applied. Quantity estimates will be based not only on the physical boundaries of the site, but on other factors including hydrogeologic conditions and migration pathways.

General response actions capable of satisfying the remedial action objectives for the site will be developed for each media. Each of the following four general response action categories will be considered: No action, as required by the National Contingency Plan (NCP); Institutional Actions; Containment; and Treatment/Disposal. These categories encompass the range of options to either eliminate or destroy hazardous constituents present, contain hazardous materials onsite, or limit the exposure to humans and the environment through engineering and/or institutional controls.

For this site, if contamination is limited, completing an IRM may encompass the final

remedy for the site. A maximum of three remedial technologies (i.e. excavation, in situ treatment, encapsulation, etc.) will be identified for each of the general response categories. These remedial technologies subsequently will be evaluated for effectiveness, reliability, implementability and cost. Only those technologies which are known to be technically feasible, reliable, effective, implementable, and cost-effective for use will be considered further. One remedial technology will be selected, for each media and carried into the development and detailed evaluation of alternatives.

Remedial technologies for each of the media will be combined into alternatives, which, for the most part, meet the remedial action objectives for the project (Note that the No Action alternative is included as required by the NCP, even though it does not generally meet objectives.) Presumptive remedies also will be identified, as applicable, for inclusion in the detailed evaluation of alternatives. Should it be determined that the existing data is insufficient to adequately evaluate the alternatives, further investigation may be required at this stage.

A2.8.4 Detailed Evaluation of Alternatives

Following development of potentially applicable remedial alternatives, a detailed evaluation of up to six alternatives will be performed in accordance with the requirements of guidance document 6 NYCRR 375-1.10, Remedy Selection. Alternatives developed will be evaluated in order to select the most appropriate and cost-effective remedy for the site. The alternatives are compared first against the six evaluation criteria listed in the guidance document. The threshold criteria include overall protection of human health and the environment and compliance with SCGs. The primary balancing criteria include: long-term effectiveness and permanence; reduction of toxicity, mobility, or volume through treatment; short-term impacts and effectiveness; implementability; and cost. Modifying criteria include community and state acceptance. Once the alternatives have been individually assessed against the six criteria, a comparative analysis is conducted to evaluate the relative performance of each alternative in relation to each evaluation criterion.

Based on the comparison made under the evaluation of alternatives, one alterative or approach will be recommended for remediation of the site. This alternative will provide protection to public health and the environmental and be consistent with State clean-up goals, while attaining SCGs in a cost-effective manner. The remedial process will document comparisons made with respect to the threshold, primary balancing, and modifying criteria, and the decision process which led to the recommendation of the alternative. Since a focused remedial approach or presumptive remedy will likely be undertaken for the site, the Screening of Alternatives step generally undertaken will, in all likelihood, be eliminated. If however, more evaluation is necessary to select between two similar alternatives, the alternatives will be screened with respect to: protecting human health and the environment; attaining SCGs; cost-effectiveness; utilizing permanent solutions or resource recovery technologies to the maximum extent practicable; and satisfying regulatory preferences for treatment that reduces toxicity, mobility, or volume.

A2.8.5 Preparation of Remedial Alternatives Report

Following completion of the development and evaluation of alternatives, a Remedial Alternatives Report will be prepared along with a draft of the Proposed Remedial Action Plan (PRAP). This report will summarize the various technologies which were considered, the evaluation and selection of preferred technologies, assembly of selected technologies into alternatives, detailed evaluation of the alternatives, and selection of the preferred alternative for the site. The report will be combined with the SI to form a single report.

PART B - QUALITY ASSURANCE/QUALITY CONTROL PLAN

B1.0 INTRODUCTION

This Quality Assurance/Quality Control Plan is designed to provide an overview of QA/QC procedures. It will give specific methods and QA/QC procedures for chemical testing of environmental samples obtained from the site. In addition, it will ensure the quality of the data produced.

The organizational structure for this project is presented in the PART A. It identifies the names of key project personnel. The project manager will be responsible for verifying that QA procedures are followed in the field. This will provide for the valid collection of representative samples. The Project Manger will be in direct contact with the analytical laboratory to monitor laboratory activities so that holding times and other QA/QC requirements are met. The number of samples, sample media, and analytical parameters/methods are provided in Table B-1.

The Project Geologist will be responsible for coordinating the activities of all personnel involved with implementing the project in the field, and will be in daily communication with the Project Manager. This person will verify that all field work is carried out in accordance with the approved project Field Sampling Plan.

In addition to overall project coordination, the Project Manager will be responsible for overseeing both the analytical and field QA/QC activities. The ultimate responsibility for maintaining quality throughout the project rests with the Project Manager.

The analytical laboratory proposed to be used for the analysis of samples will be a certified NYSDOH ELAP laboratory for the appropriate categories. The QA Manager of the laboratory will be responsible for performing project-specific audits and for overseeing the quality control data generated.

B2.0 DATA QUALITY OBJECTIVES

B2.1 Background

Data quality objectives (DQOs) are qualitative and quantitative statements, which specify the quality of data required to support the investigation for the site. DQOs focus on the identification of the end use of the data to be collected. The project DQOs will be achieved utilizing the definitive data category, as outlined in *Guidance for the Data Quality Objectives Process,* EPA QA/G-4 (September 1994). All sample analyses will provide definitive data, which are generated using rigorous analytical methods, such as reference methods approved by the United States Environmental Protection Agency (USEPA). The purpose of this investigation is to determine the nature and extent of contamination at the site.

TABLE B-1
Village of Cattaraugus
Analytical Summary Table

Sample Type	# of Samples	Parameter/Fraction	Minimum Sample Volume	Sample Container	Analytical Method	Technical Holding Time
Soil (Surface Samples)	**7** (5 onsite, 2 background)	RCRA Metals	8 oz.	8 oz. Wide-mouth glass with Teflon lined cap	6010	28 days extract, 6 months analyze
		TCL SVOCs	4 oz.	4 oz. Wide-mouth glass with Teflon lined cap	8270	14 days extract, 40 day analyze
		PCBs	4 oz.	4 oz. Wide-mouth glass with Teflon lined cap	8082	14 days extract, 40 day analyze
Soil (Test Trenches)	**5** Discrete, **2** QA/QC	RCRA Metals	8 oz.	8 oz. Wide-mouth glass with Teflon lined cap	6010	28 days extract, 6 months analyze
		TCL SVOCs	4 oz.	4 oz. Wide-mouth glass with Teflon lined cap	8270	14 days extract, 40 day analyze
		TCL VOC's	4 oz.	2 - 2 oz. Wide-mouth galss with Teflon lined cap	8260	14 days extract, 40 day analyze
		PCBs	4 oz.	4 oz. Wide-mouth glass with Teflon lined cap	8082	14 days extract, 40 day analyze
Soil (Borings)	**2** Discrete	RCRA Metals	8 oz.	8 oz. Wide-mouth glass with Teflon lined cap	6010	28 days extract, 6 months analyze
		TCL SVOCs	4 oz.	4 oz. Wide-mouth glass with Teflon lined cap	8270	14 days extract, 40 day analyze
		TCL VOC's	4 oz.	2 - 2 oz. Wide-mouth galss with Teflon lined cap	8260	14 days extract, 40 day analyze
		PCBs	4 oz.	4 oz. Wide-mouth glass with Teflon lined cap	8082	14 days extract, 40 day analyze
Sediment (Creek)	**3**	RCRA Metals	8 oz.	8 oz. Wide-mouth glass with Teflon lined cap	6010	28 days extract, 6 months analyze
		TCL SVOCs	4 oz.	4 oz. Wide-mouth glass with Teflon lined cap	8270	14 days extract, 40 day analyze
		PCBs	4 oz.	4 oz. Wide-mouth glass with Teflon lined cap	8082	14 days extract, 40 day analyze
Groundwater (Wells)	**5** (3 Discrete, 2 QA/QC)	RCRA Metals	150 mL	8 oz. Plastic Bottle	6010	6 months
		TCL SVOCs	1 L	2 - 1 L Amber Glass bottles	8270	7 days extract, 40 day analyze
		TCL VOC's	40 mL	2 - 40 mL Glass Vials	8260	14 days extract
		PCBs	1 L	2 - 1 L Amber Glass bottles	8082	7 days extract
		Pesticides	1 L	2 - 1 L Amber Glass bottles	8081	7 days extract, 40 dya analyze

All samples to be preserved in ice during shipping and kept at 4 degrees Celcius

Within the context of the purpose stated above, the project DQOs for data collected during this investigation are:

- To assess the nature of contamination in surface and subsurface soil, sediments and groundwater.
- To maintain the highest possible scientific/professional standards for each procedure.
- To develop enough information to assess if the levels of contaminates identified (lead) in the media sampled are hazardous or non-hazardous.

B2.2 QA Objectives for Chemical Data Measurement

Sample analytical methodology for the media sampled and data deliverables will meet the requirements in NYSDEC Analytical Services Protocol, October 2000 edition. Laboratories will be instructed that completed **Sample Preparation and Analysis Summary forms** are to be submitted with the analytical data packages. The laboratory also will be instructed that matrix interferences must be cleaned up, to the extent practicable. Data usability summary reports (DUSRs) will be generated. In order to achieve the definitive data category described above, the data quality indicators of precision, accuracy, representativeness, comparability, and completeness will be measured during offsite chemical analysis.

B2.2.1 Precision

Precision examines the distribution of the reported values about their mean. The distribution of reported values refers to how different the individual reported values are from the average reported value. Precision may be affected by the natural variation of the matrix or contamination within that matrix, as well as by errors made in field and/or laboratory handling procedures. Precision is evaluated using analyses of a laboratory matrix spike/matrix spike duplicate (for organics) and matrix duplicates (for inorganics), which not only exhibit sampling and analytical precision, but indicate analytical precision through the reproducibility of the analytical results. Relative Percent Difference (RPD) is used to evaluate precision. RPD criteria must meet the method requirements identified in the attached table.

B2.2.2 Accuracy

Accuracy measures the analytical bias in a measurement system. Sources of error are the sampling process, field contamination, preservation, handling, sample matrix, sample preparation, and analysis techniques. These data help to assess the potential concentration contribution from various outside sources. The laboratory objective for accuracy is to equal or exceeds the accuracy demonstrated for the applied analytical methods on samples of the same matrix. The percent recovery criterion is used to estimate accuracy based on recovery in the matrix spike/matrix spike duplicate and matrix spike blank samples. The spike and spike duplicate, which will give an indication of matrix effects that may be affecting target

compounds, are also a good gauge of method efficiency.

B2.2.3 Representativeness

Representativeness expresses the degree to which the sample data accurately and precisely represent the characteristics of a population of samples, parameter variations at a sampling point, or environmental conditions. Representativeness is a qualitative parameter, which is most concerned with the proper design of the sampling program or sub-sampling of a given sample. Objectives for representativeness are defined for sampling and analysis tasks and are a function of the investigative objectives. The sampling procedures, as described in the Field Sampling Plan (Part C), have been selected with the goal of obtaining representative samples for the media of concern.

B2.2.4 Comparability

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared with another. A DQO for this program is to produce data with the greatest possible degree of comparability. This goal is achieved through using standard techniques to collect and analyze representative samples and reporting analytical results in appropriate units. Complete field documentation will support the assessment of comparability. Comparability is limited by the other parameters (e.g., precision, accuracy, representativeness, completeness, comparability), because only when precision and accuracy are known can data sets be compared with confidence. In order for data sets may be comparable, it is imperative that contract-required methods and procedures be explicitly followed.

B2.2.5 Completeness

Completeness is defined as a measure of the amount of valid data obtainable from a measurement system compared to the amount that was expected to be obtained under normal conditions. It is important that appropriate QA procedures be maintained to verify that valid data are obtained in order to meet project needs. For the data generated, a goal of 90% is required for completeness (or usability) of the analytical data. If this goal is not met, then NYSDEC and PEI/URS project personnel will determine whether the deviations might cause the data to be rejected.

B3.0 SAMPLING LOCATIONS, CUSTODY, HOLDING TIMES, & ANALYSIS

Sampling locations and procedures are discussed in PART A - Work Plan. Procedures addressing field and laboratory sample chain-of-custody and holding times are presented in the PART C - Field Sampling Plan. All holding times begin with validated time of sample receipt (VTSR) at the laboratory. The laboratory must meet the method required detection limits which are referenced within the methods.

B4.0 CALIBRATION PROCEDURES AND FREQUENCY

In order to obtain a high level of precision and accuracy during sample processing

procedures, laboratory instruments must be calibrated properly. Several analytical support areas must be considered so the integrity of standards and reagents is upheld prior to instrument calibration. The following sections describe the analytical support areas and laboratory instrument calibration procedures.

B4.1 Analytical Support Areas

Prior to generating quality data, several analytical support areas must be considered; these are detailed in the following paragraphs.

Standard/Reagent Preparation - Primary reference standards and secondary standard solutions shall be obtained from National Institute of Standards and Technology (NIST), or other reliable commercial sources to verify the highest purity possible. The preparation and maintenance of standards and reagents will be accomplished according to the methods referenced. All standards and standard solutions are to be formally documented (i.e., in a bound logbook) and should identify the supplier, lot number, purity/concentration, receipt/preparation date, preparers name, method of preparation, expiration date, and any other pertinent information. All standard solutions shall be validated prior to use. Care shall be exercised in the proper storage and handling of standard solutions (e.g., separating volatile standards from nonvolatile standards). The laboratory shall continually monitor the quality of the standards and reagents through well documented procedures.

Balances - The analytical balances shall be calibrated and maintained in accordance with manufacturer specifications. Calibration is conducted with two Class AS" weights that bracket the expected balance use range. The laboratory shall check the accuracy of the balances daily and they must be properly documented in permanently bound logbooks.

Refrigerators/Freezers - The temperature of the refrigerators and freezers within the laboratory shall be monitored and recorded daily. This will verify that the quality of the standards and reagents is not compromised and the integrity of the analytical samples is upheld. Appropriate acceptance ranges (2 to 6°C for refrigerators) shall be clearly posted on each unit in service.

Water Supply System - The laboratory must maintain a sufficient water supply for all project needs. The grade of the water must be of the highest quality (analyte-free) in order to eliminate false-positives from the analytical results. Ultraviolet cartridges or carbon absorption treatments are recommended for organic analyses and ion-exchange treatment is recommended for inorganic tests. Appropriate documentation of the quality of the water supply system(s) will be performed on a regular basis.

B4.2 Laboratory Instruments

Calibration of instruments is required to verify that the analytical system is operating properly and at the sensitivity necessary to meet established quantitation limits. Each instrument for organic and inorganic analyses shall be calibrated with standards appropriate to the type of instrument and linear range established within the analytical method(s).

Calibration of laboratory instruments will be performed according to specified methods.

In addition to the requirements stated within the analytical methods, the contract laboratory will be required to analyze an additional low level standard at or near the detection limits. In general, standards will be used that bracket the expected concentration of the samples. This will require the use of different concentration levels, which are used to demonstrate the instrument's linear range of calibration.

Calibration of an instrument must be performed prior to the analysis of any samples and then at periodic intervals (continuing calibration) during the sample analysis to verify that the instrument is still calibrated. If the contract laboratory cannot meet the method required calibration requirements, corrective action shall be taken as discussed in Section B7.0. All corrective action procedures taken by the contract laboratory are to be documented, summarized within the case narrative, and submitted with the analytical results.

B5.0 INTERNAL QUALITY CONTROL CHECKS

Internal QC checks are used to determine if analytical operations at the laboratory are in control, as well as determining the effect sample matrix may have on data being generated. Two types of internal checks are performed and are described as batch QC and matrix-specific QC procedures. The type and frequency of specific QC samples performed by the contract laboratory will be according to the specified analytical method and project specific requirements. Acceptable criteria and/or target ranges for these QC samples are presented within the referenced analytical methods.

QC results which vary from acceptable ranges shall result in the implementation of appropriate corrective measures, potential application of qualifiers, and/or an assessment of the impact these corrective measures have on the established data quality objectives. Quality control samples including any project-specific QC will be analyzed are discussed below.

B5.1 Batch QC

Method Blanks - A method blank is defined as laboratory-distilled or deionized water that is carried through the entire analytical procedure. The method blank is used to determine the level of laboratory background contamination. Method blanks are analyzed at a frequency of one per analytical batch.

Matrix Spike Blank Samples - A matrix spike blank (MSB) sample is an aliquot of water spiked (fortified) with all the elements being analyzed for calculation of precision and accuracy to verify that the analysis that is being performed is in control. A MSB will be performed for each matrix and organic parameter only.

B5.2 Matrix-Specific QC

Matrix Spike Samples - An aliquot of a matrix is spiked with known concentrations of specific compounds as stipulated by the methodology. The matrix spike (MS) and matrix spike duplicate (MSD) are subjected to the entire analytical procedure in order to assess both accuracy and precision of the method for the matrix by measuring the percent recovery and relative percent difference of the two spiked samples. The samples are used to assess matrix interference effects on the method, as well as to evaluate instrument performance. MS/MSDs are analyzed at a frequency of one each per 20 samples per matrix.

Matrix Duplicates - The matrix duplicate (MD) is two representative aliquots of the same sample which are prepared and analyzed identically. Collection of duplicate samples provides for the evaluation of precision both in the field and at the laboratory by comparing the analytical results of two samples taken from the same location. Obtaining duplicate samples from a soil matrix requires homogenization (except for volatile organic compounds) of the sample aliquot prior to filling sample containers, in order to best achieve representative samples. Every effort will be made to obtain replicate samples; however, due to interferences, lack of homogeneity, and the nature of the soil samples, the analytical results are not always reproducible.

Rinsate (Equipment) Blanks - A rinsate blank is a sample of laboratory demonstrated analyte-free water passed through and over the cleaned sampling equipment. A rinsate blank is used to indicate potential contamination from ambient air and from sample instruments used to collect and transfer samples. This water must originate from one common source within the laboratory and must be the same water used by the laboratory performing the analysis. The rinsate blank should be collected, transported, and analyzed in the same manner as the samples acquired that day. Rinsate blanks for nonaqueous matrices should be performed at a rate of 10 percent of the total number of samples collected throughout the sampling event. Rinse blanks will not be performed on samples (i.e., groundwater) where dedicated disposable equipment is used.

Trip Blanks - Trip blanks are not required for nonaqueous matrices. Trip blanks are required for aqueous sampling events. They consist of a set of sample bottles filled at the laboratory with laboratory demonstrated analyte free water. These samples then accompany the bottles that are prepared at the lab into the field and back to the laboratory, along with the collected samples for analysis. These bottles are never opened in the field. Trip blanks must return to the lab with the same set of bottles they accompanied to the field. Trip blanks will be analyzed for volatile organic parameters. Trip blanks must be included at a rate of one per volatile sample shipment.

B6.0 CALCULATION OF DATA QUALITY INDICATORS

B6.1 Precision

Precision is evaluated using analyses of a field duplicate and/or a laboratory MS/MSD which not only exhibit sampling and analytical precision, but indicate analytical precision through the reproducibility of the analytical results. RPD is used to evaluate precision by the following formula:

$$RPD = \frac{(X_1 - X_2)}{[(X_1 + X_2)/2]} \times 100\%$$

where:

X_1 = Measured value of sample or matrix spike
X_2 = Measured value of duplicate or matrix spike duplicate

Precision will be determined through the use of MS/MSD (for organics) and matrix duplicates (for inorganics) analyses.

B6.2 Accuracy

Accuracy is defined as the degree of difference between the measured or calculated value and the true value. The closer the numerical value of the measurement comes to the true value or actual concentration, the more accurate the measurement is. Analytical accuracy is expressed as the percent recovery of a compound or element that has been added to the environmental sample at known concentrations before analysis. Analytical accuracy may be assessed through the use of known and unknown QC samples and spiked samples. It is presented as percent recovery. Accuracy will be determined from matrix spike, matrix spike duplicate, and matrix spike blank samples, as well as from surrogate compounds added to organic fractions (i.e., volatiles, semivolatiles, PCB), and is calculated as follows:

$$Accuracy\ (\%R) = \frac{(X_s - X_u)}{K} \times 100\%$$

where:

X_s - Measured value of the spike sample
X_u - Measured value of the unspiked sample
K - Known amount of spike in the sample

B6.3 Completeness

Completeness is calculated on a per matrix basis for the project and is calculated as follows:

$$Completeness\ (\%C) = \frac{(X_v - X_n)}{N} \times 100\%$$

where:

X_v - Number of valid measurements
X_n - Number of invalid measurements
N - Number of valid measurements expected to be obtained

B7.0 CORRECTIVE ACTIONS

Laboratory corrective actions shall be implemented to resolve problems and restore proper functioning to the analytical system when errors, deficiencies, or out-of-control situations exist at the laboratory. Full documentation of the corrective action procedure needed to resolve the problem shall be filed in the project records, and the information summarized in the case narrative. A discussion of the corrective actions to be taken is presented in the following sections.

B7.1 Incoming Samples

Problems noted during sample receipt shall be documented by the laboratory. The PEI Project Manager shall be contacted immediately for problem resolution. All corrective actions shall be documented thoroughly.

B7.2 Sample Holding Times

If any sample extraction and/or analyses exceed method holding time requirements, the PEI Project Manager shall be notified immediately for problem resolution. All corrective actions shall be documented thoroughly.

B7.3 Instrument Calibration

Sample analysis shall not be allowed until all initial calibrations meet the appropriate requirements. All laboratory instrumentation must be calibrated in accordance with method requirements. If any initial/continuing calibration standards exceed method QC limits, recalibration must be performed and, if necessary, reanalysis of all samples affected back to the previous acceptable calibration check.

B7.4 Reporting Limits

The laboratory must meet the method required detection limits listed in NYSDEC ASP , 10/95 criteria. If difficulties arise in achieving these limits due to a particular sample matrix, the laboratory must notify PEI project personnel for problem resolution. In order to achieve those detection limits, the laboratory must utilize all appropriate cleanup procedures in an attempt to retain the project required detection limits. When any sample requires a secondary dilution due to high levels of target analytes, the laboratory must document all initial analyses and secondary dilution results. Secondary dilution will be permitted only to bring target analytes within the linear range of calibration. If samples are analyzed at a secondary dilution with no target analytes detected, the PEI Project Manager will be immediately

notified so that appropriate corrective actions can be initiated.

B7.5 Method QC

All QC method-specified QC samples, shall meet the method requirements referenced in the analytical methods. Failure of method-required QC will result in the review and possible qualification of all affected data. If the laboratory cannot find any errors, the affected sample(s) shall be reanalyzed and/or re-extracted/redigested, then reanalyzed within method-required holding times to verify the presence or absence of matrix effects. If matrix effect is confirmed, the corresponding data shall be flagged accordingly using the flagging symbols and criteria. If matrix effect is not confirmed, then the entire batch of samples may have to be reanalyzed and/or re-extracted/redigested, then reanalyzed at no cost to the PEI. PEI shall be notified as soon as possible to discuss possible corrective actions should unusually difficult sample matrices be encountered.

B7.6 Calculation Errors

All analytical results must be reviewed systematically for accuracy prior to submittal. If upon data review calculation and/or reporting errors exist, the laboratory will be required to reissue the analytical data report with the corrective actions appropriately documented in the case narrative.

B8.0 DATA REDUCTION, VALIDATION, AND USABILITY

B8.1 Data Reduction

Laboratory analytical data are first generated in raw form at the instrument. These data may be either in a graphic or printed tabular format. Specific data generation procedures and calculations are found in each of the referenced methods. Analytical results must be reported consistently. Identification of all analytes must be accomplished with an authentic standard of the analyte traceable to NIST or USEPA sources. Individuals experienced with a particular analysis and knowledgeable of requirements will perform data reduction.

B8.2 Data Validation

Data validation is a systematic procedure of reviewing a body of data against a set of established criteria to provide a specified level of assurance of validity prior to its intended use. All analytical samples collected will receive a limited data review. The data validation will be limited to a review of holding times, completeness of all required deliverables, review of QC results (surrogates, spikes, duplicates) and a 10% check of all samples analyzed to ensure they were analyzed properly. The methods as well as the general guidelines presented in the following documents will be used during the data review USEPA *Contract Laboratory Program (CLP) Organic Data Review, SOP Nos. HW-6, Revision #11* and USEPA *Evaluation of Metals Data for the Contract Laboratory Program* based on 3/90,

SOW, Revision XI. These documents will be used with the following exceptions:

- Technical holding times will be in accordance with NYSDEC ASP, 10/95 edition.

- Organic calibration and QC criteria will be in accordance with NYSDEC ASP, 10/95 edition. Data will be qualified if it does not meet NYSDEC ASP, 10/95 criteria.

Where possible, discrepancies will be resolved by the PEI project manager (i.e., no letters will be written to laboratories). A complete analytical data validation is not anticipated. However, if the initial limited data audit reveals significant deviations and problems with the analytical data, project personnel may recommend a complete variation of the data.

B9.0 REFERENCES

Comprehensive Environmental Response Compensation and Liability Act (CERCLA) Quality Assurance Manual, Final Copy , Revision I, October 1989.

National Enforcement Investigations Center of USEPA Office of Enforcement. *NEIC Policies and Procedures.* Washington: USEPA.

New York State Department of Environmental Conservation (NYSDEC). 1995. *Analytical Services Protocol*, (ASP) 10/95 Edition. Albany: NYSDEC

PART C - FIELD SAMPLING PLAN

C1.0 INTRODUCTION

This Field Sampling Plan (FSP) is designed to provide procedures for the field activities outlined in the Work Plan for the investigation at the Bush Industries site. It will serve as the field procedures manual to be strictly followed by all personnel. Adherence to these procedures will ensure the quality and usability of the field data collected. In addition to the field procedures outlined in this document, all personnel performing field activities must comply with:

- The appropriate Health and Safety guidelines found in the Health and Safety Plan (HSP) Part D;
- The Quality Assurance/Quality Control measures outlined in Part B; and
- The scope of work outlined in the Work Plan, Part A.

C2.0 SOIL INVESTIGATION

C2.1 Surface Soil Sampling

Prior to the soil investigation, a Surficial Debris Inventory will be completed.

As noted, portions of the site contain piles/layers of C&D debris. This task will involve the visual examination, characterization and inventory of potential waste materials, and identification of stains and spills, onsite. To accomplish this task in an efficient manner, the PEI/URS team will start at one end of the site and progress in an orderly fashion across the facility to ensure that all debris piles have been examined. Initially, the site will be divided into grids using the base map prepared for the site. A series of stakes will be set-out in the field at the grid intersection points during the survey of the site. Each grid will be identified by an alphanumeric designation (e.g. A1, A2, etc.). The grids will also be used to locate test trench locations.

The debris located within each grid will be visually examined and the observations recorded in a field notebook. A photographic record of the debris in each grid also will be maintained. PEI/URS will prepare a spreadsheet identifying the type and quantity of debris present in each grid. This will provide the Village with an inventory and estimated quantity of materials of potential concern for remediation and/or for a demolition contractor. Based on the results of this task, a follow-up sampling program will be developed, as necessary for disposal characterization. This information also will be utilized to identify materials that may need to be cleared during final site re-development.

Soil sampling will be conducted after this inventory.

Surface Soil Sampling Summary:

Surficial soil samples will be collected with stainless-steel spoons. Stainless steel is preferred over chrome-plated spoons or trowels. This method is most appropriate for shallow samples to a depth of one foot or less. A stainless-steel shovel or the front bucket from the backhoe will be used to remove the overlying turf/soil. The location and frequency of the samples are found in PART A - Work Plan. The samples will be analyzed for the parameters presented in PART B-Table B-1.

Procedures:

All surface soil samples will be collected in the following manner:

1. A square measuring one (1) meter on all sides will be marked out in the sample location.
2. Using a pre-cleaned stainless-steel spoon, a grab sample of the top two inches of soil just below the sod will be collected and placed in a pre-cleaned stainless steel bowl, homogenized, composited into one (1) analytical sample, and placed in appropriate clean sample containers.
3. The samples will be placed directly into sample containers.
4. Secure a teflon-lined cap onto the container and place sample on ice in a cooler for shipment to the laboratory or onsite screening analysis.
5. Label the sample bottle with the appropriate sample tag/label. Be sure to label the tag carefully and clearly, addressing all the categories or parameters. Complete all chain-of-custody documents and record in the field log book.
6. If sampling equipment is not dedicated, decontaminate equipment after use and between sample locations using the procedure in Section B8.0.
7. Record all field data in the field notebook.

C2.2 Subsurface Soil Sampling

This section discusses the procedures for collecting an aliquot of sample for chemical analysis. Subsurface soil samples will be obtained as outlined in Section C2.3. The detailed procedure is outlined below:

1. Inspect test pit and/or boring core stratigraphy, sample soil and records depth interval. Record any physical characteristics (e.g., obvious contamination, odor, or discoloration) in the field logbook. Simultaneously place the probe of a calibrated PID into the exposed soil. Record the instrument readings in the field logbook.
2. Samples are to be collected at locations and frequency as discussed in Section A2.3 of PART A.
3. If not dedicated, decontaminate sampling implements after use and between sample locations.
4. Record field sampling information in the field logbook. Label each sample container with the appropriate sample identification data as outlined in Section C4.0 and place

sample in a cooler for shipment to the laboratory.

5. Initiate chain-of-custody procedures.

C2.2.1 Test Pit Procedures

Summary

Test pit sampling is a standard method of soil sampling to obtain representative samples for identification as well as to serve as a means of obtaining a large amount of information about the subsurface.

The following steps describe the procedures for test pit operations.

Field Preparation

1. Verify underground utilities have been found.
2. Review scope of work, safety procedures and communication signals with all site personnel. Identify local suppliers of sampling expendable and overnight delivery services. Pre-clean the sampling equipment prior to use, as necessary.
3. Mark/review trench locations. The specific locations will be determined in the field. Trench locations will be selected based on several factors, including areas of visible potential surface contamination/debris, pre-determined locations to examine representative areas across the site, and vegetative obstructions (see A2.3).
4. After completing each trench and sampling (as described above), subsurface soil will be backfilled. Backfilling will occur in the order in which the soil was removed. The backhoe will then be decontaminated over the test pit. The pit will then be filled in with clean overburden/topsoil and/or the fill that was previously on the surface, as available.

Excavation and Sample Collection

1. Maneuver the backhoe into position
2. Commence excavation with the backhoe positioned upwind of the excavation. Conduct continuous air monitoring with appropriate air monitoring equipment. Screen the soil for volatile organic compounds as it is placed on the soil pile.
3. Test trenching will be carried out in the following manner and as directed by PEI/URS's site representative:
    - For each test trench, topsoil and/or cover soil (if any) will be excavated and placed on plastic sheeting.
    - Soil/fill below the topsoil will be excavated to the depth directed by PEI/URS's site representative and placed on plastic sheeting separate from the topsoil/cover soil.
    - At completion of excavation all equipment in contact with the soil/fill will

be steam cleaned over the trench after backfilling.

- All trenches will be backfilled with indigenous soil in the order in which the material was removed with the topsoil/cover soil placed last to cover the trench.

4. A geologic log will be recorded as each trench is excavated. Upon completing the excavation of the pit, visually inspect the horizons of the soil for discoloration or staining and photo document the pit. The following information will be recorded for each test pit on the Test Pit Log:

- The total depth, length, and width of the excavation.
- The depth and thickness of distinct soil or lithologic units.
- A lithologic description of each unit.
- A description of any man-made materials or apparent contamination.
- Elevation of incoming water, if encountered.
- Depth to groundwater and/or bedrock.
- Using dedicated stainless steel spoons, collect soil samples as detailed in Section C2.2. Soil samples will be collected directly from the bucket of the backhoe. The backhoe will collect a sample from a specific soil horizon and bring the sample back to the ground surface. **No personnel shall enter the excavation to collect samples unless a confined permit has been obtained.** Each soil sample will be placed directly into appropriate sample bottles/jars.

5. Carefully and clearly label the sample bottles and jars with the appropriate bottle label.
6. Place each jar in an ice-filled cooler.
7. Use the chain-of-custody form to document the types and numbers of test pit samples collected and logged.
8. Record the time and date of sample collection as well as a description of the sample and any associated air monitoring measurements in the field logbook.
9. All excavated soil will be returned to the trench following completion of excavation activities at each individual trench location. Each test pit will be backfilled and compacted prior to moving to the next. During the test pit operations an attempt will be made to segregate clean from dirty soil using visual observations and PID screening. When the test pit is being filled, if dirty soil was encountered, it will be placed in the bottom of the pit and covered with clean soil.
10. Decontamination sampling equipment - Decontaminate backhoe bucket prior to commencing and between locations.

Post Operations

1. Organize field notes. All relevant information recorded in the field logbook and the Test Pit Log.
2. All samples should be shipped to the laboratory as soon as possible, but no more than 24 hours after being collected.

Reference: American Society for Testing Material (ASTM), 1992, ASTM D1586-84, Standard Method for Penetration Test and Split Barrel Sampling of Soils.

C2.2.1.a Unified Soil Classification System

Soils are classified for engineering purposes according to the Unified Soil Classification System (USCS) adopted by the United States Army Corps of Engineers and Bureau of Reclamation. Soil properties which form the basis for the USCS are:

- Percentage of gravel, sand, and fines
- Shape of the grain-size distribution curve
- Plasticity and compressibility characteristics

According to this system, all soils are divided into three major groups: coarse-grained, fine-grained, and highly-organic (peaty). The boundary between coarse-grained and fine-grained soils is taken to be the 200-mesh sieve (0.074 mm). In the field the distinction is based on whether the individual particles can be seen with the unaided eye. If more than 50% of the soil by weight is judged to consist of grains that can be distinguished separately, the soil is considered to be coarse-grained.

The coarse-grained soils are divided into gravelly (G) or sandy (S) soils, depending on whether more or less than 50% of the visible grains are larger than the No. 4 sieve (3/16 inch). They are each divided further into four groups:

W: Well graded; fairly clean (<5% finer than 0.074 mm)

P: Poorly graded (gap-graded); fairly clean (<5% finer than 0.074mm)

C: Clayey (>12% finer than 0.074mm); plastic (clayey) fines. Fine fraction above a line with plasticity index above 7.

M: Silty (>12% finer than 0.074 mm); nonplastic or silty fines. Fine fraction below a line and plasticity index below 4.

The soils are represented by symbols such as GW or SP. Borderline materials are represented by a double symbol, as GW-GC.

The fine-grained soils are divided into three groups: inorganic silts (M), inorganic clays (C), and organic silts and clays (O). The soils are further divided into those having liquid limits lower than 50% (L), or higher (H).

The distinction between the inorganic clays C and the inorganic silts M and organic soils O, is made on the basis of a modified plasticity chart. Soils CH and CL are represented by points above the A-line, whereas soils OH, OL, and MH correspond to positions below. Soils ML, except for a few clayey fine sands, are also represented by points below the A-line. The organic soils O are distinguished from the inorganic soils M and C by their characteristic odor and dark color.

C2.2.1.b Visual Identification

Soil properties and other observed characteristics normally identified in the field are defined below:

- Color
- Moisture conditions
- Grain size (estimated maximum grain size & estimated percent by weight of fines (material passing No. 200 sieve)
- Gradation
- Grain shape
- Plasticity
- Predominant soil type

Secondary components of soil:

- Classification symbol
- Other features such as organic, chemical, or metallic content, compactness, consistency, cohesiveness near plastic limit, dry strength, source - residual, or transported (aeolian, water borne, glacial deposit, etc.)

C2.2.2 Geoprobe Drilling Program

Soil sampling will also be conducted using Geoprobe drilling methods.

Macro Core Drilling Procedures

Summary

Geoprobe Macro Core direct push sampling is a standard method of soil sampling to obtain representative samples for identification as well as to serve as a means of obtaining a specific amount of information about the subsurface.

The following steps describe the procedures for Macro Core direct push drilling operations.

Field Preparation

1. Verify underground utilities have been found.
2. Review scope of work, safety procedures and communication signals with all site personnel. Identify local suppliers of sampling expendable and overnight delivery services. Pre-clean the sampling equipment prior to use, as necessary.
3. Mark/review boring locations. The specific locations will be determined in the field. Boring locations will be selected based on several factors, including areas of visible potential surface contamination, pre-determined locations to examine representative

areas across the site, and vegetative obstructions (see A2.3).

4. After completing each boring hole, subsurface soil will be backfilled. The boring hole will then be filled in with spoils and/or clean sand, if any available.

Excavation and Sample Collection

1. Maneuver the Geoprobe rig into position
2. Commence drilling with the Geoprobe rig positioned upwind of the excavation. Conduct continuous air monitoring with appropriate air monitoring equipment. Screen the soil for volatile organic compounds as it is placed in a staged area.
3. Geoprobe borings will be carried out in the following manor and as directed by PEI/URS's site representative:

- Start up drill rig and raise mast.
- If there is pavement use star bit with rig in rotary setting to penetrate pavement.
- If you are setting a road box excavate a hole large enough to set the road box before you advance the borehole.
- Unthread the bottom of the sample tube and inset a new sample liner. Thread the shoe on the bottom of the sample tube.
- Thread the drive cap on the top of the sample tube.
- Align the sample tube so it is plumb in both directions. The will assure you drill a straight borehole. It is important to drill a straight borehole.
- Drive the top of the sample tube to ground surface.
- Unthread the drive cap and thread on the pull cap.
- Pull the sample tube from the ground. Use caution so as not to pinch your hand between the drill rods, pull cap or rig during any of these steps.
- With the sample tube from the ground unthread the cutting shoe and pull the sample liner from the sample tube. You may need to use needle nose pliers to reach in the sample tube and grab the liner. Cut the sample liner lengthwise in two places and take it to the client.
- Insert a new liner and thread on the cutting shoe.
- Align the sample tube so it is plumb in both directions. The will assure you drill a straight borehole. It is important to drill a straight borehole.
- Push the sample tube to ground surface and thread a four-foot long drill rod onto the top of the sample tube. Thread on the drive cap and drive the top of the drill rod to ground surface.
- Unthread the drive cap and thread on the pull cap.
- Pull the drill rod from the ground.
- Remove the pull cap from the drill rod and thread it on the sample tube
- Pull the sample tube from the ground.
- Repeat step 17, 18, 19 and 20.
- After completing 20 add a second drill rod and drive it to ground surface. The borehole should now be 12 feet deep.
- This procedure is repeated until the desired depth or refusal is reached.

- For each Geoprobe boring, the sleeve/core will be placed on plastic sheeting.
- The soil stratigraphy will be excavated to the depth directed by PEI/URS's site representative and placed on plastic sheeting.
- At completion of probe excavation all equipment in contact with the soil/fill will be cleaned in a decontamination area using Alconox and water.
- All probe holes will be backfilled with indigenous soil in the order in which the material was removed with the topsoil/sand/cover soil placed last to cover the hole.

4. A geologic log will be recorded as each borehole is excavated. Upon completing the excavation of the borehole, visually inspect the horizons of the soil for discoloration or staining and photo document the pit. The following information will be recorded for each boring on the Geoprobe Log:

-The total depth, length, and width of the excavation.
-The depth and thickness of distinct soil or lithologic units.
-A lithologic description of each unit.
-A description of any man-made materials or apparent contamination.
-Elevation of incoming water, if encountered.
-Depth to groundwater and/or bedrock.

5. Using dedicated stainless steel spoons, collect soil samples as detailed in Section C2.2. Soil samples will be collected directly from the plastic sleeve of the probe core. Each soil sample will be placed directly into appropriate sample bottles/jars.
6. Carefully and clearly label the sample bottles and jars with the appropriate bottle label. Place each jar in an ice-filled cooler.
7. Use the chain-of-custody form to document the types and numbers of borehole samples collected and logged.
8. Record the time and date of sample collection as well as a description of the sample and any associated air monitoring measurements in the field logbook.
9. All excavated soil will be returned to the probe hole following completion of excavation activities at each individual trench location. Each probe hole will be backfilled and compacted prior to moving to the next.
10. Decontamination sampling equipment - Decontaminate all rods, shoes, and other geoprobe tools prior to commencing and between locations.

Post Operations

1. Organize field notes. All relevant information recorded in the field logbook and the Boring Log.
2. All samples should be shipped to the laboratory as soon as possible, but no more than 24 hours after being collected.

Reference: American Society for Testing Material (ASTM), 1992, ASTM D1586-84, Standard Method for Penetration Test and Split Barrel Sampling of Soils.

C3.0 GROUNDWATER INVESTIGATION

C3.1 Monitoring Well (Piezometer) Installation Procedures

Summary

The following procedure outlines a NYSDEC-approved method of constructing groundwater monitoring wells within unconsolidated material which enables monitoring of groundwater elevation and acquiring groundwater samples for laboratory testing. The open hole method means you simply place the well screen and riser inside the drilled borehole. For this method to be used the borehole must remain open to the required total depth of the well. Stick-up or road box completion. The following is a step-by-step method for the open-hole method of installing a monitoring well.

Procedure

1. Thread a cap on the bottom section of well screen.
2. If more than one section of well screen is required, thread it to the bottom section
3. Having the riser section close at hand lower the screen into the borehole.
4. Add the riser sections to the screen. Do not drop the screen in the borehole.
5. Add riser sections as require until the bottom screen section touches the bottom of the borehole.
6. If completing the well with a road box, mark the riser so it will be two inches below the lid of the road box and then cut the riser.
7. Place a slip cap over the top of the rise section.
8. Place sand in the space between the borehole and the PVC screen and riser to the depth the inspector request. Place the sand in very slowly so it does not bridge in the well bore.
9. Place bentonite and cement above the sand-pack.
10. Grout in the road box with concrete mix.

C3.2 Well Development Procedures

Summary

Following completion of drilling and well installation, and no sooner than 24 hours after installation, each well will be developed by a surge block method followed by pumping or bailing until the discharged water is relatively sediment free and the indicator parameters (pH, temperature, and specific conductivity) have reached steady-state. Developing the well not only removes any sediment, but may improve the hydraulic properties of the sand pack. Well development water will be placed on the ground surface downgradient of the well. The effectiveness of the development measures will be closely monitored in order to keep the volume of discharged waters to the minimum necessary to obtain sediment-free samples. Steady-state pH, temperature, and specific conductivity readings will be used as a guide for

discontinuing well development.

Procedure

1) An appropriate well development method should be selected, depending on water level depth, well productivity, and sediment content of the water. Well development options include: (a) bailing; (b) manual pumping; and (c) powered suction-lift or submersible pumping. Any of these options may be exercised in concert with surging of the well screen using an appropriately sized surge block.

2) Equipment should be assembled, decontaminated, if necessary, and installed in the monitoring well. Care should be taken not to introduce contaminants to the equipment during installation.

3) Well development should proceed by repeated removal of water from the well until the discharged water is relatively sediment-free. Volume of water removed, pH and conductivity measurements, are recorded on the Well Development/Purging Logs.

4) Well development will occur no sooner than 24 hours after installation. Well development will continue until readings of <50 NTUs are obtained.

C3.3 Groundwater Well Purging/Sampling

Summary

To collect representative groundwater samples, groundwater wells must be adequately purged to sampling. Purging will require removing three to five volumes of standing water in rapidly recharging wells and at least one volume from wells with slow recharge rates. Sampling should commence as soon as adequate recharge has occurred.

The wells will be sampled following procedures found in Section C2.5.b. The samples will be labeled and shipped following procedures outlined in Sections C9.0 and C10.0 and analyzed according to the program outlined in the QA/QC Plan (Part B).

C3.4 Well Purging Procedures

Well development will be performed as specified in Section C2.4.1.c.

Procedure

1) The well cover will be carefully removed to avoid any foreign material enter the well. The interior of the riser pipe will be monitored for organic vapors

using a PID. If reading of greater than 5 ppm is recorded, the well will be vented until levels are below 5 ppm before pumping is started.

2) Using an electronic water level indicator, the water level below top of casing will be measured. Knowing the total depth of the well, it will be possible to determine the volume of water in the well. The end of the probe will be washed with soap and rinsed with deionized-water between wells.

3) Dedicated new polyethylene discharge and intake tubing (½ inch diameter HDPE) will be used for each well. During this evacuation of the well, the intake opening of the pump tubing will be positioned just below the surface of the well water. If the water level drops, then the tubing will be lowered as needed to maintain flow. Pumping from the top of the water column will ensure proper flushing of the well. Pumping will continue until the required volumes are removed.
If the well purges to dryness and recharges rapidly (within 15 minutes), water will continue to be removed as it recharges until the required volumes are removed. If the well purges to dryness and is slow recharge (greater than 15 minutes), evacuation will be terminated.

4) Purging will continue until three volumes of water have been removed. Well volumes will be calculated. Measurements for pH, temperature, turbidity, and conductivity will be recorded during the purging along with physical observations.

5) Well purging data are to be recorded in the field notebook and on the Well Development/Purging Log.

C3.5 Groundwater Sampling Procedures

Procedure

1) Well sampling may be performed on the same date as purging at any time after the well has recovered sufficiently to sample, or within 24 hours after evacuation, if the well recharges slowly. If a well does not contain or yield sufficient volume for all required laboratory analytical testing, then a decision will be made to prioritize analyses. If a well takes longer than 24 hors to recharge, then a decision will be made after consultation with NYSDEC whether the sample will be considered valid.

2) After well purging is complete and the well has recharged sufficiently per the previous item, a sample will be collected by pumping into appropriate containers.

3) All sample bottles will be labeled in the field using a waterproof permanent marker. Procedures outlined in Section C9.0 will be followed.

4) Samples will be collected into verifiably clean sample bottles (containing required preservatives) and placed on ice in coolers for transport to the analytical laboratory. Chain-of-custody will be initiated. The analytical laboratory will certify that the sample bottles are analyte-free.

5) A separate sample will be collected into a 120 milliliter (mL) plastic specimen cup to measure pH, conductivity, turbidity, and temperature off the well in the field.

6) Well sampling data are to be recorded in the field notebook and on the Well Development/Purging Log.

Test Pit Temporary Piezometers

In addition to installing monitoring wells (described above), in order to collect additional data on groundwater levels across the site, temporary piezometers consisting of a one-inch diameter PVC standpipe equipped with a 2-foot long slotted screen section will be installed in selected test trenches (i.e. those exhibiting an inflow of groundwater). The standpipe will be positioned in the corner of the test trench prior to backfilling. The location and elevation of the temporary piezometers will be surveyed after installation. Along with the well data, this will allow the groundwater elevations to be determined and plotted to create a groundwater contour map.

C4.0 SEDIMENT SAMPLING

PEI/URS proposes to supplement the surface/subsurface assessment with a limited number of sediment samples collected from the creek adjacent to the property. Sampling techniques and equipment will be selected to minimize effects on the chemical and physical integrity of the sample in order to obtain a representative sample of the sediment.

A total of three (3) samples will be collected from the creek; one upstream, one adjacent to the property; and one downstream to assess potential extent of contamination. If the creek is wadeable at the time of sampling, a sediment sample will be collected by using a stainless steel scoop or spoon.

The sampling will be accomplished by wading into the surface water body and while facing upstream (into the current), scooping the sample along the bottom of the surface water body directly into the sample container(s) in the upstream direction. Excess water will be removed from the bottle. If the creek is too deep to wade, a stainless steel scoop or spoon will be attached to a piece of conduit which can be used from the creek bank to sample as described above. The depth and thickness of the sediments will also be measured for possible use in

remedial selections.

C5.0 DOCUMENTATION

Summary

Each subsurface test pit and boring core will be logged in a bound field notebook during drilling by the supervising geologist. Field notes will include descriptions of subsurface material encountered during test pit and drilling, sample numbers, and types of samples recovered from the test pits and wells. Additionally, the geologist will note time and material expenditures for later verification of contractor invoices.

Upon completion of daily drilling activities, the geologist will complete the Daily Drilling Record and initiate chain-of-custody an any samples recovered for geotechnical or chemical testing. Following completion of the drilling program, the geologist will transfer field logs onto standard boring log forms and well completion logs for the site investigation report.

C6.0 SITE BOUNDARY and TOPOGRAPHIC SURVEY

Topographic and Boundary Survey

DEC requires that a survey of the property has been completed by a licensed surveyor and that a survey endorsement exists within the past 3 months, unless the survey is dated within the past year. If it is established that no topographic and/or boundary survey maps are available for the site meeting these requirements, then a site map will be generated. The map will be completed in accordance with best engineering practice, and will be prepared under the direct supervision of a NYS-licensed land surveyor. The survey will be accomplished in two steps. First a base map will be developed. Second, after field work is completed, all sample locations and well locations associated with the investigation will be surveyed and shown on the map.

The area to be surveyed will include the entire parcel. A two person crew equipped with digital GPS equipment will be utilized to collect the field data. This project shall be referenced to the New York State Plane Coordinate System West Zone North American Datum of 1983 (NAD83) as a basis of horizontal control and North American Vertical Datum of 1988 (NAVD88) as a basis of vertical control. The two main aspects of this project Topographic and Boundary surveys will be accomplished in the following manner:

Boundary Survey: The required title research to complete a boundary survey to the specification outlined by the New York State Association of Professional Land Surveyors and as further enhanced by the Niagara Frontier Land Surveyors Association will be completed. This research will be completed using records acquired from sources such as the Village and/or County Clerk's Office and local area surveyors. Once completed, the final exterior boundary will be monumented with irons pins at the corners where none exist. All of the title information and recovered and set corner monuments will then be incorporated

onto a final map. This map will indicate the boundary lines with all existing buildings, fences, and other key site features and boundary analysis data.

Topographic Survey: A topographic survey shall be accomplished for the entire site. Additionally, elevation shots will be taken approximately 25 feet outside of the property to facilitate any drainage design. Additional shots may be required depending upon actual field conditions. The overall topographic survey shall be completed to a scale the same as the boundary survey and incorporated onto the same mapping. All drainage and above ground features will be included on this mapping. Ditches, drainage features, utility and manmade improvements will be noted. The base map will be prepared with a minimum two foot contour interval for the property.

Site Grid Layout: During the site survey, a 100' grid will be established for use in inventorying the onsite debris and for locating test trenches. Initially, the site will be divided into grids using the base map prepared for the site. A series of stakes will be set-out in the field at the grid intersection points during the survey of the site. Each grid will be identified by an alphanumeric designation (e.g. A1, A2, etc.). The grids will also be used to locate test trench locations.

C7.0 WETLANDS DELINEATION

The objective of this task is to determine if wetlands exist on or adjacent to the property and if they impact site re-development based on state or federal jurisdictions/guidance. Wetland mitigation may be appropriate based on the proposed remediation alternative. Activities associated with stream/wetland issues includes initial data review, followed by field work. Prior to performing the field work, available maps and photography obtained during the Phase I will be reviewed including: The National Wetland Inventory (NWI) map (if available) and the New York State Department of Environmental Conservation (NYSDEC) freshwater wetland map for the project area; The Cattaraugus County USDA Soil Survey maps; USGS topographic map; and Property maps as may be available depicting the location of the site.

After this review, a one-day field survey will be completed. Wetland delineations, as appropriate, will be performed using the routine 1987 U.S. Army Corps of Engineers (Corps) three-parameter approach. For each suspected wetland, appropriate Corps data forms will be completed and representative photographs will be taken. Field data forms will be used to record relevant information concerning the wetland(s) and stream on the property. Information recorded will include soils (as applicable, given the potentially disturbed conditions), hydrologic conditions, vegetation characteristics, and general habitat function/value. Photographs will be taken to document wetland/stream conditions, and numbered flags hung in the field to identify the wetland boundaries, as applicable. The project team will identify potential site remediation strategies incorporating the stream corridor, as appropriate.

C8.0 SAMPLING CONTAINER SELECTION REQUIREMENTS

The selection of sample containers is based on both the media being sampled and the analysis of interest.

C9.0 SAMPLE LABELING

Summary

In order to prevent misidentification and to aid in the handling of environmental samples collected during the field investigation, the procedures listed below will be followed:

Procedure: Affixed to each sample container will be a non-removable (when wet) label. The sample bottle will be wrapped with 2-inch cellophane tape. Apply label and wrap with tape to cover label. The following information will be written with permanent marker:

1. Site name
2. Sample identification
3. Project number
4. Date/time
5. Sampler's initials
6. Sample preservation
7. Analysis required

Each sample of each matrix will be assigned a unique identification alpha-numeric code. An example of this code and a description of its components is presented below:

Examples:

1. PEI-BI-ss1
   Where: PEI= Panamerican Environmental, Inc.
   BI = Bush Industries
   SS-1 = surface soil sample 1
2. PEI-BI-TP1-2-3
   Where: TP1 = Test Pit 1
   2-3 = Sample Depth in feet

List of Abbreviations

Sample Type	
TP =	Test Pit
BH=	Geoprobe Borehole
SW =	Surface Water
SED =	Sediment
SB =	Soil Boring
SS =	Surface Soil (0-2" depth)

MSB =	Matrix Spike Blank
NSS =	Near Surface Soil (1' - 2' depth)
EB =	Equipment Rinse Blank
HW =	Hydrant Water (Decon/Drilling Water)
GW =	Groundwater
TB =	Trip Blank
RB =	Rinse Blank
MS/MSD =	Matrix Spike/Matrix Spike Duplicate

C10.0 SAMPLE SHIPPING

Summary

Proper documentation of sample collection and the methods used to control these documents are referred to as chain-of-custody procedures. Chain-of-custody procedures are essential for presentation of sample analytical chemistry results as evidence in litigation or at administrative hearings held by regulatory agencies. Chain-of-custody procedures also serve to minimize loss or misidentification of samples and to ensure that unauthorized persons do not tamper with collected samples.

The procedures used in the predesign field activities follow the chain-of-custody guidelines outlined in *NEIC Policies and Procedures*, prepared by the National Enforcement Investigations Center (NEIC) of the USEPA Office of Enforcement.

Procedure:

1) The chain-of-custody record should be completely filled out with all relevant information.
2) The white original travels with the samples and should be placed in a Ziplock bag and taped inside the sample cooler.
3) Place about 3 inches of inert cushioning material (such as vermiculite or zonolite) in bottom of cooler.
4) Place bottles in cooler so they do not touch (use cardboard dividers).
5) Put VOA vials in Ziplock bags and place them in the center of the cooler.
6) Pack bottles, especially VOA vials, in ice in plastic bags.
7) Pack cooler with ice in Ziplock plastic bags.
8) Pack cooler with cushioning material.
9) Put paperwork in plastic bags and tape with masking tape to inside lid of cooler.
10) Tape drain shut.
11) Wrap cooler completely with strapping tape at two locations. Secure lid by taping. Do not cover any labels.
12) Place lab address on top of cooler.
13) Ship samples via overnight carrier the same day that they are collected.
14) Put "This side up" labels on all four sides and "Fragile" labels on at least two sides.

15) Affix numbered custody seals on front right and left of cooler. Cover seals with wide, clear tape.

PART D HEALTH AND SAFETY PROGRAM

D1.0 INTRODUCTION

The following health and safety procedures will be followed by PEI/URS personnel performing the activities described in the Field Sampling Plan.

D1.1 Purpose

Directed at protecting the health and safety of the field crew during field activities, the following site-specific Health and Safety Plan (HSP) was prepared to provide safe procedures and practices for personnel engaged in conducting the field activities associated with this plan. The plan has been developed using the Occupational Safety and Health Administration (OSHA) 1910 regulations as guidance. The purpose of this HSP is to establish personnel protection standards and mandatory safety practices and procedures for this task specific effort. This plan assigns responsibilities, establishes standard operating procedures, and provides for contingencies that may arise during the field efforts.

D1.2 Applicability

The provisions of the plan are mandatory for all personnel engaged in field activities. All personnel who engage in these activities must be familiar with this plan and comply with its requirements. The plan is based on available information concerning the project area and planned tasks. If more data concerning the project area becomes available which constitute safety concerns, the plan will be modified accordingly. One crew member will be designated Field Safety Officer and will be responsible for in-field safety. Any necessary modifications to the plan will be made by the Field Safety Officer after discussion with the PEI Project Manager and Safety Manager. All modifications will be documented in the HSP plan and field book and provided to the Project Manager and the Health and Safety Manager for approval. A copy of this plan will be available for review by all on-site personnel. In addition, a copy of the plan will be provided to all subcontractors prior to their initial entry onto the site.

Before field activities begin, all personnel will be required to read the plan. All personnel must agree to comply with the minimum requirements of the site-specific plan, be responsible for health and safety, and sign the Statement of Compliance for all on-site employees before site work begins.

D1.3 Field Activities

The tasks associated with the performance of the field work include:

1. Test trenching
2. Geoprobe boring sampling
3. Surficial and subsurface soil sampling

4. Sediment sampling
5. Groundwater sampling
6. Site boundary and topographic survey
7. Wetlands delineation

D1.4 Personnel Requirements

Key personnel are as follows:

Project Manager:	Mr. John B. Berry, P.E.
QA/QC Field Oversight	Mr. Peter J. Gorton and Mr. Robert Henschel
Field Geologist:	Justin J. Ryszkiewicz and URS Geologist
Safety Manager:	Mr. Peter J. Gorton

Site personnel and their duties are outlined below.

The Project Manager will be responsible for all personnel and subcontractors on-site and designates duties to on-site personnel. The Project Manager has the primary responsibility for:

1. Assuring that personnel are aware of the provisions of the HSP plan and are instructed in the work practices necessary to ensure safety for planned procedures and in emergencies;
2. Verifying that the provisions of this plan are implemented;
3. Assuring that appropriate personnel protective equipment (PPE), if necessary, is available for and properly utilized by all personnel;
4. Assuring that personnel are aware of the potential hazards associated with site operations;
5. Supervising the monitoring of safety performances by all personnel to ensure that required work practices are employed; and,
6. Maintaining sign-off forms and safety briefing forms.

Field Safety Manager:

1. Monitor safety hazards to determine if potential hazards are present;
2. Determine changes to work efforts or equipment needed to ensure the safety of personnel;
3. Evaluate on-site conditions and recommend to the Field Manager modifications to work plans needed to maintain personnel safety;
4. Determine that appropriate safety equipment is available on-site and monitor its proper use;
5. Monitor field personnel and potential for exposure to physical hazards, such as heat/cold stress, safety rules near heavy equipment and borings;
6. Halt site operations if unsafe conditions occur or if work is not being performed in compliance with this plan:

7. Monitor performance of all personnel to ensure that the required safety procedures are followed. If established safety rules and practices are violated, a report of the incident will be filed and sent to the Project Manager within 48 hours of the incident; and,
8. Conduct daily safety meetings as necessary.

Field Personnel: The responsibility of each field crew member is to follow the safe work practices of this HSP and in general to:

1. Be aware of the procedures outlined in this plan;
2. Take reasonable precautions to prevent injury to him/herself and to his/her co-workers;
3. Perform only those tasks that he/she believes can be done safely and
4. Immediately report any accidents or unsafe conditions to the safety personnel and Project Manager;
5. Notify the safety personnel and Project Manager of any special medical problems (i.e., allergies or medical restrictions) and make certain that on-site personnel are aware of any such problems;
6. Think Safety First prior to and while conducting field work; and,
7. Do not eat, drink or smoke in work areas.

Each crew member has the authority to halt work should he deem conditions to be unsafe. Visitors will be required to report to the Field Manager or designee and follow the requirements of this plan.

D2.0 SITE DESCRIPTION AND SAFETY CONCERNS

D2.1 Site Background And Description

The property is the location of the former Setter Brothers/Bush Industries property, located at 1 North Main Street in the Town of New Albion, Village of Cattaraugus, Cattaraugus County, New York. Vacant since about 1989, the property consists of approximately 4.43-acres and is currently owned by the Village of Cattaraugus. The property contains the remnants of a 1 and 2-story masonry, steel frame, wood and brick former manufacturing facility which has been mostly demolished. Currently there is a partial steel beam shell and building debris consisting of wood, some steel, concrete and brick across much of the former facility area. The former concrete slab foundation covers much of the former footprint of the facility to and immediately adjacent to Main Street. The manufacturing facility was constructed around 1900 with several additions added over time. The gross floor space was estimated by an appraiser in 1995 to be approximately 100,000 square feet. Various other structures and portions of former buildings are also located on this property. Historical maps of the property indicate that a Standard Oil facility, an apple evaporator, and gasoline service were also formerly associated with portions of the property. Nothing is left on the surface of the site relative to these former uses.

The property is slightly irregular in shape and is located on the east side of and fronts on Main Street. The northern and northeastern border of the property descends gradually, then at an increasingly greater slope to a very steep slope into a ravine to a creek bed/floodway. This is a branch of Cattaraugus Creek that winds along the eastern-northeastern border of the parcel. The Property appears to have been filled along the steep slope and construction and demolition debris was observed in the side banks of the slope and on the surface over the bank towards the creek. The property is bordered to the south-southwest by a rail line. Concrete and asphalt parking areas (former facility cement floor)are located along the western portions of the property (the side of the property along Main Street) and fill material was observed in the grassy northern and eastern portions of the property. The remainder of the property is grass/weed covered with some bare spots and fill areas consisting of stone, crushed concrete and brick, asphalt and other C&D materials.

For a more in-depth background of the uses of the property, refer to Section A1.1 (Site History and Description).

The following summarizes the potential chemical, physical and biological hazards.

D2.2 Hazard Evaluation

Based on the nature of the potential project hazards and tasks, the hazard potential is deemed low. Specific health and safety concerns particular to the project tasks include an awareness of potential low levels of petroleum hydrocarbons, PAH and metal contamination, underground utilities, and manual/mechanical operation of field equipment. During the subsurface investigations, extreme care must be taken so as not to damage an underground utility. The location of utilities will be marked by the utility company prior to the test pit program. A minimum distance of 2.5 feet form the marked utilities will be maintained when selecting locations.

D2.2.1 Chemical Hazards

Preliminary evaluation of the site indicates that the area is composed of primarily fill material as an extension of the industrial nature of the site. Potential chemicals of concern could include petroleum compounds, various chemicals that were present from glues, acids, and solvents for laminates and veneers, any chemicals associated with dumping of fill and C&D materials in various locations and along the slope to the creek; and the possibility of other materials/chemicals associated with other process on portion of the property (tire vulcanization).

Potential routes of exposure include:

- Skin contact;
- Inhalation of vapors or particles;
- Ingestion; and,
- Entry of contaminants through cuts, abrasions or punctures.

The anticipated levels of personnel protection will include Level D personal protective equipment:

1. Long sleeve shirt and long pants (recommended),
2. Work boots,
3. Hard hats, if work is conducted around heavy equipment or overhead hazards,
4. Safety Glasses
5. Gloves to include work gloves and chemical resistant gloves when sampling potentially contaminated materials.

Modifications may include chemically resistant gloves, boots/booties, and overalls. If monitoring levels indicate levels requiring respiratory protection (sustained readings at or above 5 ppm above a daily established background), work will be halted pending discussions with field and office management. If any readings are recorded above background, work will proceed with caution and breathing zone monitoring will be conducted.

D2.2.2 Physical Hazards

Depending on the time of year, weather conditions or work activity, some of the following potential physical hazards could result from project activities:

1. Noise
2. Heat Stress
3. Cold Stress
4. Slips, trips, and falls
5. Exposure to moving machinery or stored energy, particularly during drilling
6. Physical eye hazards
7. Lacerations and skin punctures
8. Back strain from lifting equipment
9. Electrical storms and high winds
10. Contact with overhead or underground utilities

Slips, Trips, and Falls. Field personnel shall become familiar with the general terrain and potential physical hazards which would be associated with accidental risk of slips, trips, and/or falls. Special care shall be taken along the steep embankment and when performing sediment sampling requiring wading into the creek. Workers will observe all pedestrian and vehicle rules and regulations. Extra caution will be observed while working near roadways and while driving in reverse to ensure safety.

Noise. All personnel shall wear hearing protection devices, such as ear muffs or ear plugs, if work conditions warrant. These conditions would include difficulty hearing while speaking to one another at a normal tone within three feet. If normal speech is interfered with due to work noise, the field safety officer will initiate the mandatory use of hearing protection around the backhoe, or other noise-producing equipment or events.

Heat/Cold Stress. Heat stress work modification may be necessary during ambient temperatures of greater than 29° C (85° F) while wearing normal clothing or exceeding 21° C (70° F) while wearing personnel protective clothing. Because heat stress is one of the most common and potentially serious illnesses at work sites, regular monitoring and preventive measures will be utilized should conditions warrant. This may include additional rest periods, supplemental fluids, restricted consumption of drinks containing caffeine or alcohol, use of cooling vests, or modification of work practices.

Most of the work to be conducted during the investigations is expected to consist of light manual labor and visual observation. Given the nature of the work and probable temperatures, heat stress hazards are not anticipated.

If work is to be conducted during winter conditions, cold stress may be a concern to the health and safety of personnel. Wet clothes combined with cold temperatures can lead to hypothermia. If air temperature is less than 40° F (4° C) and an employee perspires, the employee must change to dry clothes. The following summary of the signs and symptoms of cold stress are provided as a guide for field and safety personnel.

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

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

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

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

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

1. Involuntary shivering
2. Irrational behavior
3. Slurred speech
4. Sluggishness

Fire and Explosion. These hazards will be minimal for activities associated with this project. All heavy equipment will be equipped with a fire extinguisher..

Trenching and Excavations. There are a variety of potential health and safety hazards associated with excavations. These include:

- Surface encumbrances, such as structures, fencing, stored materials, etc., may interfere with safe excavations;
- Below- and above-ground utilities, such as water and sewer lines, gas lines, power lines, telephones, and optical cable lines, etc.;
- Overhead power lines and other utilities which may be contacted by the excavation equipment;
- Vehicle and heavy equipment traffic around the excavations;
- Falling loads from lifting or digging equipment;
- Water accumulation within excavations;
- Hazardous atmospheres, such as oxygen deficiency, flammable gases or vapors, and toxic gases which may occur in excavations,
- Falling into or driving equipment or vehicles into unprotected or unmarked excavations; and,
- Cave-in of loose rocks and soil at the excavation face.

OSHA requirements for trenching and excavations are contained in 29 CFR, subpart P, 1926:650 thru 1926.652.

Basic minimum excavation requirements should include:

- Personnel entry into excavations should be minimized, whenever possible and no entry will occur in pits below 4 feet in depth.
- Sloping, shoring or some other equivalent means should be utilized, as required.
- Surface encumbrances such as structures, fencing, piping, stored material etc. which may interfere with safe excavations should be avoided, removed or adequately supported prior to the start of excavations. Support systems should be inspected daily.
- Underground utility locations should be checked and determined and permits as necessary should be in place prior to initiating excavations. Local utility companies will be contacted at least two days in advance, advised of proposed work, and requested to locate underground installations. When excavations approach the estimated location of utilities, the exact location should be determined by careful probing or hand digging and when it is uncovered, proper supports should be provided.
- A minimum safe distance of 15 feet should be maintained when working around overhead high-voltage lines or the line should be de-energized following appropriate lock-out and tag-out procedures by qualified utility personnel.
- Excavations five feet or more deep if entered will require an adequate means of exit, such as a ladder, ramp, or steps and located so as to require no more than 25 feet of lateral travel. Under no circumstances should personnel be raised using heavy equipment.
- Personnel working around heavy equipment, or who may be exposed to public vehicular traffic should wear a traffic warning vest. At night, flourescent or other reflective material is recommended to be worn.
- Heavy equipment or other vehicles operating next to or approaching the edge of an

excavation will require that the operator have a clear view of the edge of the excavation, or that warning systems such as barricades, hand or mechanical signals, or stop logs be used. If possible the surface grade should slope away from the excavation.

- Personnel should be safely located in and around the trench and should not work underneath loads handled by lifting or digging equipment.
- Hazardous atmospheres, such as oxygen deficiency (atmospheres containing less than 19.5% oxygen), flammable gases or vapors (airborne concentrations greater than 20% of the lower explosive limit), and toxic gases or vapors (airborne concentrations above the OSHA Permissible Exposure Limit or other exposure limits) may occur in excavations. Monitoring should be conducted for hazardous atmospheres prior to entry and at regular intervals. Ventilation or respiratory protection may be provided to prevent personnel exposures to oxygen deficient or toxic atmospheres. Periodic retesting (at least each shift) of the excavation will be conducted to verify that the atmosphere is acceptable. A log or field book records should be maintained.
- Personnel should not work in excavations that have accumulated water or where water is accumulating unless adequate precautions have been taken. These precautions can include special support or shield systems, water removal systems such as pumps, or safety harnesses and lifelines. Groundwater entering the excavation should be properly directed away and down gradient from the excavation.
- Safety harnesses and lifelines should be worn by personnel entering excavations that qualify as confined spaces.
- Excavations near structures should include support systems such as shoring, bracing, or underpinning to maintain the stability of adjoining buildings, walls, sidewalks, or other structures endangered by the excavation operations.
- Loose rock, excavated or other material, and spoils should be effectively stored and retained at least two and preferably 5 feet or more from the edge of the excavation. Barriers or other effective retaining devices may be used in order to prevent spoils or other materials from falling into the excavation.
- Walkways or bridges with standard guardrails that meet OSHA specifications will be provided where employees, the public, or equipment are required to cross over excavations.
- Adequate barrier physical protection should be provided and excavations should be barricaded or covered when not in use or left unattended. Excavations should be backfilled as soon as possible when completed.
- Safety personnel should conduct inspections prior to the start of work and as needed throughout the work shift and after occurrence that increases the hazard of collapse (i.e., heavy rain, vibration from heavy equipment, freezing and thawing, etc.).
- Personnel working in excavations should be protected from cave-ins by sloping and/or benching of excavation walls, a shoring system or some other equivalent means in accordance with OSHA regulations. Soil type is important in the determination of the angle of repose for sloping and benching, and the design of shoring systems.

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D2.2.3 Biological Hazards

Biological hazards can result from encounters with mammals, insects, snakes, spiders, ticks, plants, parasites, and pathogens. Mammals can bite or scratch when cornered or surprised. The bite or scratch can result in local infection with systemic pathogens or parasites. Insect and spider bites can result in severe allergic reactions in sensitive individuals. Exposure to poison ivy, poison oak or poison sumac results in skin rash. Ticks are a vector for a number of serious diseases. Dead animals, organic wastes, and contaminated soil and water can harbor parasites and pathogens. These hazards will be reduced to non-existent if work is conducted during late fall and winter months. The following are highlighted because they represent more likely concerns for the site-specific tasks and location:

Bees, Ants, Wasps and Hornets. Sensitization by the victim to the venom from repeated stings can result in anaphylactic reactions. If a stinger remains in the skin, it should be removed by teasing or scraping, rather than pulling. An ice cube placed over the sting will reduce pain. An analgesic-corticosteroid lotion is often useful. People with known hypersensitivity to such stings should consult with their doctor about carrying a kit containing an antihistamine and aqueous epinephrine in a pre-filled syringe when in endemic areas. Nests and hives for bees, wasps, hornets and yellow jackets often occur in the ground, trees and brush. Before any nests or hives are disturbed, an alternate sampling location should be selected. If the sample location cannot be relocated, site personnel who may have allergic reactions shall not work in these areas.

Storm Conditions. When lightening is within 10 miles of the work site, all personnel should evacuate to a safe area.

Sun. When working in the sun, personnel should apply appropriate sun screening lotions (30 sun screen or above), and/or wear long sleve clothing and hats.

Field personnel should refrain from handling any foreign objects such as hypodermic needles, glass, etc.

D3.0 SAFE WORKING PRACTICES

D3.1 General Practices

The following general safe work practices apply:

- Eating, drinking, chewing gum or tobacco and smoking are prohibited within the work area as part of safe work practices.
- Contact with potentially contaminated substances should be avoided. Puddles, pools, mud, etc. should not be walked through if possible. Kneeling, leaning, or sitting on equipment or on the ground should be avoided whenever possible.
- Upon leaving the work area, hands, face and other exposed skin surfaces should be thoroughly washed.

- Unusual site conditions shall be promptly conveyed to the site manager and safety personnel as well as the project management for resolution.
- A first-aid kit shall be available at the site.
- Field personnel should use all their senses to alert themselves to potentially dangerous situations (i.e., presence of strong, irritating, or nauseating odors).
- Personal hygiene practices such as no eating, drinking or smoking will be followed.
- If severe dusty conditions hazardous to the crew are present, soils will be dampened to mitigate dust. All equipment will be cleaned before leaving the work area.
- Field personnel must attend safety briefings and should be familiar with the physical characteristics of the investigation, including:
    - Accessibility to associates, equipment, and vehicles.
    - Areas of known or suspected contamination.
    - Site access.
    - Routes and procedures to be used during emergencies.
- Personnel will perform all investigation activities with a buddy who is able to:
    - Provide his or her partner with assistance.
    - Notify management / emergency personnel if emergency help is needed.
- Excavation activities shall be terminated immediately in event of thunder and/or electrical storm.
- The use of alcohol or drugs at the site is strictly prohibited.

D4.0 PERSONAL SAFETY EQUIPMENT

As required by OSHA in 29 CFR 1920.132, this plan constitutes a workplace hazard assessment to select personal protective equipment (PPE) to perform the site investigation.

The PPE to be donned by on-site personnel during this investigation are those associated with the industry standard of level D. Protective clothing and equipment to initiate the project will include:

- Work clothes
- Work boots
- Work gloves as necessary
- Hard hat if work is conducted in areas with overhead danger
- Hearing protection as necessary

Modifications may include chemically resistant gloves, boots/booties, and overalls. If monitoring levels indicate levels requiring respiratory protection (sustained readings at or above 5 ppm above a daily established background), work will be halted pending discussions with field and office management.

D5.0 SITE CONTROL

Site control will be established near each work zone (drilling or excavation locations). The purpose is to control access to the immediate excavation/trenches from individuals not

associated with the project. Site control will be established within ten feet of the drilling unit or other heavy equipment. The work area will be appropriately designated as an exclusion area.

D5.1 Work Zones (For excavations/drilling using heavy equipment or deeper than 3 feet)

Each excavation will be set up in work zones to include an exclusion area and support zone. Exact configuration of each zone is dependent upon location, weather conditions, wind direction and topography. The safety manager will establish the control areas daily at each excavation.

An area of 10 feet (as practical) around each excavation will be designated as the exclusion area. This is the area where potential physical hazards are most likely to be encountered by field personnel. The size of the exclusion area may be altered to accommodate site conditions and the drilling/excavation location. A personal decontamination area will be established at the perimeter of the work zone consisting primarily of a boot wash.

A support area will be defined for each field activity. Support equipment will be located in this clean area. Normal work clothes are appropriate within this area. The location of this area depends on factors such as accessibility, wind direction (upwind of the operation.), and resources (i.e., roads, shelter, utilities). The location of this zone will be established daily.

Upon completion of each test pit all excavation, the excavation will be filled (no pit will be left open unattended) and support equipment will be steam cleaned before leaving the site.

D6.0 EMERGENCY INFORMATION

In the event of an emergency, the field team members or the site safety manager will employ emergency procedures. A copy of emergency information will be kept in the field vehicle and will be reviewed during the initial site briefing. Copies of emergency telephone numbers and directions to the nearest hospital will be prominently posted in the field vehicle.

D6.1 Emergency Medical Treatment And First Aid

A first aid kit large enough to accommodate anticipated emergencies will be kept in the field vehicle. If any injury should require advanced medical assistance, emergency personnel will be notified and the victim will be transported to the hospital.

In the event of an injury or illness, work will cease until the safety manager and field manager have examined the cause of the incident and have taken appropriate corrective action. Any injury or illness, regardless of extent, is to be reported to the project manager.

D6.2 Emergency Telephone Numbers and Hospital

Emergency telephone numbers for medical and chemical emergencies will be posted in the field vehicle are listed below:

Ambulance 911
Fire 911
Police - NYS Troopers 911
Poison Control Center 1-800-888-7655
PEI Health & Safety Manager:
Mr. Peter J. Gorton: Work - 821-1650
Cellular - 308-8220
NYSDEC Spills Hotline-1-800-457-7362
NYSDEC Project Manager, Linda Ross -716-851-7220
NYSDOH Project Manager, Cameron O'Connor-716-847-4385
Village of Cattaraugus, Village Clerk, Jodi E. Miller-716-257-3661

Hospital **Tri-County Memorial Hospital**

100 Memorial Drive
Gowanda, NY 14070 US

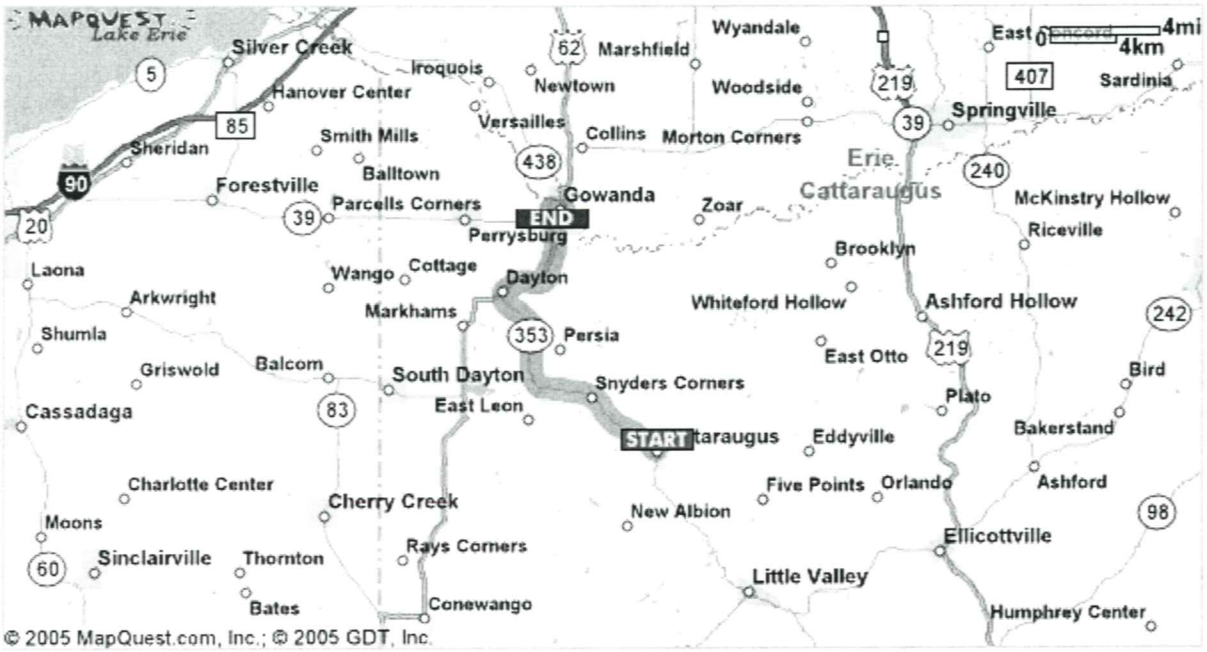
Directions		Mileage
Start out going Northwest on Main Street (NY-353)		9.3 miles
Turn NY-353 becomes US-62		4.5 miles
Turn SHARP LEFT onto NY-39/W. Main Street		0.3 miles
Turn RIGHT onto Aldrich St.		0.1 miles
Turn LEFT onto Memorial Street		0.2 miles
Total Estimated Time: 21 minutes	Total Distance:	14.54 miles

See attached map for route to the Tri-County Memorial Hospital Facility

Verbal communications between workers or use of a site vehicle horn repeated at intervals of three short beeps shall be used to signal all on-site personnel to immediately evacuate the area and report to the vehicle parking area.

D6.3 Emergency Standard Operating Procedures

The following standard operating procedures are to be implemented by on-site personnel in the event of an emergency. The field managers shall manage response actions.



Start:
1 N Main St
Cattaraugus, NY 14719-1011, US

End:
100 Memorial Dr
Gowanda, NY 14070-1111, US

Notes:

- Upon notification of injury to personnel, the designated **emergency signal shall be sounded**, if necessary. All personnel are to terminate their work activities and assemble in a safe location. The emergency medical service and hospital emergency room shall be notified of the situation. If the injury is minor, but requires medical attention, the field safety manager shall accompany the victim to the hospital and provide assistance in describing the circumstances of the accident to the attending physician.
- Upon notification of an equipment failure or accident, the field safety manager shall determine the effect of the failure or accident on site operations. If the failure or accident affects the safety of personnel or prevents completion of the scheduled operations, all personnel are to leave the area until the situation is evaluated and appropriate actions taken.
- Upon notification of a natural disaster, such as tornado, high winds, flood, thunderstorm or earthquake, on-site work activities are to be terminated and all personnel are to evacuate the area.

D6.4 Emergency Response Follow-Up Actions

Following activation of the Emergency Response Plan, the field safety manager shall notify the project manager and other PEI/URS managers. The field safety manager shall submit a written report documenting the incident within two working days.

D6.5 Medical Treatment For Site Accidents/Incidents

The field safety manager shall be informed of any site-related injury, exposure or medical condition resulting from work activities. All personnel are entitled to medical evaluation and treatment in the event of a site accident or incident.

D6.6 Site Medical Supplies and Services

The field safety manager or a trained first aid crew member shall evaluate all injuries at the site and render emergency first-aid treatment as appropriate. If an injury is minor but requires professional medical evaluation, the field safety manager shall escort the employee to the appropriate emergency room. For major injuries occurring at the site, emergency services shall be requested.

A first-aid kit shall be available, readily accessible and fully stocked. The first-aid kit shall be located within specified vehicles used for on-site operations.

D6.7 Universal Precautions

Universal precautions shall be followed on-site at all times. This consists of treating all

human blood and certain body fluids as being infected with Human Immune Deficiency Virus (HIV), Hepatitis B virus (HBV), and other bloodborne pathogens. Clothing and first-aid materials visibly contaminated with blood or other body fluids will be collected and placed into a biohazard bag. Individuals providing first aid or cleanup of blood- or body-fluid contaminated items should wear latex gloves. If providing CPR, a one-way valve CPR device should be used. Biohazard bags, latex gloves, and CPR devices will be included in the site first-aid kits.

Work areas visibly contaminated with blood or body fluids shall be cleaned using a 1:10 dilution of household bleach. If equipment becomes contaminated with blood or body fluids, and can not be sufficiently cleaned, the equipment shall be placed in a plastic bag and sealed.

Any personnel servicing the equipment shall be made aware of the contamination, so that proper precautions can be taken.

D7.0 RECORD KEEPING

The Field Manager and safety manager are responsible for site record keeping. Prior to the start of work, they will review this Plan.

A Site Safety Briefing will be completed prior to the initiation of investigation activities. This shall be recorded in The field log book An Accident Report should be completed by the Field Manager in the event that an accident occurs and forwarded to the office administrative manager.

D8.0 PERSONNEL TRAINING REQUIREMENTS

D8.1 Initial Site Entry Briefing

Prior to initial site entry, the field safety manager shall provide all personnel (including site visitors) with site-specific health and safety training. A record of this training shall be maintained. This training shall consist of the following:

- Discussion of the elements contained within this plan
- Discussion of responsibilities and duties of key site personnel
- Discussion of physical, biological and chemical hazards present at the site
- Discussion of work assignments and responsibilities
- Discussion of the correct use and limitations of the required PPE
- Discussion of the emergency procedures to be followed at the site
- Safe work practices to minimize risk
- Communication procedures and equipment
- Emergency notification procedures

D8.2 Daily Safety Briefings

The field safety manager will determine if a daily safety briefing with all site personnel is needed. The briefing shall discuss the specific tasks scheduled for that day and the following topics:

- Specific work plans
- Physical, chemical or biological hazards anticipated
- Fire or explosion hazards
- PPE required
- Emergency procedures, including emergency escape routes, emergency medical treatment, and medical evacuation from the site
- Weather forecast for the day
- Buddy system
- Communication requirements
- Site control requirements
- Material handling requirements

PART E - CITIZEN PARTICIPATION PLAN

E1.0 Introduction

The Village of Cattaraugus presently owns the former Bush Industries property. PEI/URS has been retained to provide an analysis of environmental conditions and environmental action plan as part of an overall strategy to redevelop the parcel. Revitalization will involve a broad segment of the community which needs to be informed during the study process. This need for public information is consistent with NYSDEC' emphasis on providing the maximum amount of information and public dialogue during projects that have impact on the community's environment. This section of the plan has been developed using the requirements for citizen participation activities for the environmental restoration ("brownfields") program in 6 NYCCR Part 375 and applicable guidance is set forth in the NYSDEC DER "Municipal Assistance For Environmental Restoration Projects ("Brownfields") Program Procedures Handbook", dated December 1997.

The CCP describes a vehicle for establishing clear and open communication between the Village, the consultant, the NYSDEC , affected residents, community advocacy groups, and elected officials. The communication channels established under the plan will aid in identifying possible sources of environmental contamination and, in later phases, selecting the remedial alternative which meets economic and environmental objectives while accomplishing local-defined community development goals. The CCP includes three main components:

(1)Preparing project fact sheets which describes the site history, economic and environmental objectives, and study activities. The study schedule will be an integral part of this data source. Fact sheets will be supplemented as additional information is developed. Specific community and environmental issues will be described.

(2)Presenting well designed, open, and effectively publicized community workshops at a strategic juncture of the study process. It will be designed to engage the community and strengthen the project by building consensus on remedial action.

(3)Establishing well-publicized information outlets and contacts for the project. Contacts will include media outlets, local government officials, individuals that may have first-hand site-related information, adjacent land owners, and representatives of interested organizations, among others.

Each of these elements are discussed in more detail in this plan, along with an assignment of responsibility for carrying out each task. The Village and NYSDEC project managers and public participation specialists along with the consultant are responsible for this process. PEI/URS personnel will assist. All CCP products will be developed in draft form by the responsible participant and reviewed by the NYSDEC prior to public release. Where appropriate, citizen participation activities will be coordinated with municipal review

activities and procedures.

E2.0 CITIZEN PARTICIPATION ELEMENTS

E2.1 Property Information and Background

The property is the location of the former Setter Brothers/Bush Industries property, located at 1 North Main Street in the Town of New Albion, Village of Cattaraugus, Cattaraugus County, New York. Vacant since about 1989, the property consists of approximately 4.43-acres and is currently owned by the Village of Cattaraugus. The property contains the remnants of a 1 and 2-story masonry, steel frame, wood and brick former manufacturing facility which has been mostly demolished. Currently there is a partial steel beam shell and building debris consisting of wood, some steel, concrete and brick across much of the former facility area. The former concrete slab foundation covers much of the former footprint of the facility to and immediately adjacent to Main Street. The manufacturing facility was constructed around 1900 with several additions added over time. The gross floor space was estimated by an appraiser in 1995 to be approximately 100,000 square feet. Various other structures and portions of former buildings are also located on this property. Historical maps of the property indicate that a Standard Oil facility, an apple evaporator, and gasoline service were also formerly associated with portions of the property. Nothing is left on the surface of the site relative to these former uses.

The property is slightly irregular in shape and is located on the east side of and fronts on Main Street. The northern and northeastern border of the property descends gradually, then at an increasingly greater slope to a very steep slope into a ravine to a creek bed/floodway. This is a branch of Cattaraugus Creek that winds along the eastern-northeastern border of the parcel. The Property appears to have been filled along the steep slope and construction and demolition debris was observed in the side banks of the slope and on the surface over the bank towards the creek. The property is bordered to the south-southwest by a rail line. Concrete and asphalt parking areas (former facility cement floor)are located along the western portions of the property (the side of the property along Main Street) and fill material was observed in the grassy northern and eastern portions of the property. The remainder of the property is grass/weed covered with some bare spots and fill areas consisting of stone, crushed concrete and brick, asphalt and other C&D materials.

For a more in-depth background of the uses of the property, refer to Section A1.1 (Site History and Description).

E2.2 Project Description and Objectives

The Village of Cattaraugus has contracted Panamerican Environmental, Inc. (PEI) and its teaming partner URS Corporation (URS) to conduct a site investigation and remedial

analysis program for the site. The goal of the project is to complete focused environmental investigations as part of the New York State Department of Environmental Protection (DEC) Environmental Restoration Program (ERP -under the 1996 Clean Water/Clean Air Bond Act ECL Article 56 - 6NYCRR 375-4) to accurately assess the potential for contamination, if any, its source and nature and extent and to develop sufficient data that supports the development of long-term remedial alternatives and/or the completion of an IRM at the site.

The purpose of the site assessment will be to verify that material disposed on the property is limited to C&D debris and to further determine the likelihood of contamination associated with past commercial use and past petroleum use on portions of the property. This information will allow the identification and screening of various technologies for their capability to meet specific cleanup and redevelopment concept plan objectives. The objective is to minimize or eliminate impacts from the property that effect the potential re-use of the property. As such, the scope of the investigations and/or remediation will be tailored to the future use of the site.

E2.3 Schedule

It is PEI/URS intention to have a SI/RAR for this property completed within twelve months, however, the initiation of an IRM may extend this time frame. Typically if no delays occur, the SI task can usually be completed within 1½ to 2 months and the RAR can be completed within 2 months from the end of the SI/RAR. Once the final tasks are agreed upon, a detailed schedule will be developed and will be part of this work plan. A draft schedule is attached which includes public participation activities.

E2.4 Local Document Repository

An information repository will be established for the project. The repository will provide a convenient outlet for information regarding the site including interim reports. The repository will be located where it provides the maximum opportunity for residents to view site-related documents and should be well known in the community. Access via public transit will be a consideration in selecting the site. In addition, the site should be accessible to the handicapped and open after normal working hours. Repository personnel will be briefed in the nature of the available materials.

The Village will be responsible for designating the location of the information repository.

E2.5 Identification/Contact List of Affected/Interested Parties

A contact list will be developed for use in informing residents of the agencies and individuals involved in the study process and as a mailing list for meeting notices, fact sheets and other relevant documents. The Village will provide the contact list and the location of the repository. As the study progresses, this list may be expanded but will include, in its initial form:

- owners of properties which are adjacent to the property
- organizations and groups with potential interest in the activities
- local news media
- people who have information about the property
- local government officials

E2.6 Municipal and DEC/DOH Contacts

Municipal and DEC/DOH contacts are as follows:

Village of Cattaraugus:

DEC Project Manger:
Ms. Linda C. Ross, C.P.G.
NYSDEC Region 9
270 Michigan Avenue
Buffalo, New York 14203-2999
716-851-7220
716-821-7226 (fax)

DOH Project Manager:
Mr. Cameron O'Connor
NYSDOH
584 Delaware Avenue
Buffalo, New York 14202
716-47-4385

E2.7 Significant Issues of Public Interest

Any significant issues of public interest will be identified and specified in fact sheets and public meetings.

E2.8 Specific Citizen Participation Activities

Fact Sheet Preparation

An initial fact sheet will be developed prior to initiating field investigations. It will be targeted to local residents in an effort to provide the maximum amount of information regarding the activity they will see in their neighborhood and community. The fact sheet will discuss the site history, community development objectives, an overview of the study process, the project schedule, and upcoming opportunities for participating in project activities. A contact list will be provided along with the location of a public document repository.

A revised fact sheet will be prepared prior to the community workshop when the draft SI/RAR has been produced. It will be designed to provide the community with information

about the site which will enable them to participate more fully in the workshop process.

Public Meetings/Community Workshop

Prior to finalizing the SI/RAR and/or PRAP, a community workshop will be held. The purpose of the workshop will be to inform the community of the findings of the investigations and to present the remedial alternatives. The PEI/URS technical team will assist the Village/NYSDEC in developing information in lay terms and will assist the discussion of technical information.

The location, date, and time of the workshop will be promoted through the media channels identified above. Promotional activities will provide at least 15 days notice of the workshop. Announcements will clearly state the purpose of the meeting, contact people, and the locations where draft reports are available.

The meeting will be conducted as an interactive workshops where small groups have access to group facilitator. This process minimizes the potential for small groups of individuals to dominate discussions at the expense of less assertive individuals. At the conclusion of the workshop, the facilitator will summarize the issues and suggestions developed in each group. A 45-day comment period will follow the community workshop which will enable residents that are more comfortable with written communication to provide comments.

The Village will provide the meeting place and promote the workshop, PEI/URS will provide technical representation at the workshop.

A Responsiveness Summary that addressed public comment about the PRAP will be prepared and notification of public availability of ROD will occur.

Public Inquiries

The Village Project Manager will be the primary point of contact for inquiries during the project. At their discretion, technical issues will be referred to PEI/URS's Project Manager. Field Personnel will be instructed not to be evasive and will be educated as to the appropriate contact person should there be resident inquiries during their field investigations. In addition, they will be provided with fact sheets for distribution to interested residents.

Local Educational Opportunity

At the request and with the help of the Village, PEI/URS will help develop educational opportunities with the local school thru which the science, engineering, and regulatory aspects of the project are exposed to students as the project progresses.