Ashland Advanced Materials, LLC

6100-6200 Niagara Falls Blvd., Niagara Falls, NY 14304

Brownfield Cleanup Program Remedial Investigation Work Plan

6100-6200 Niagara Falls Boulevard Site

(BCP Site C932146)

May 2009

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6407-001

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1. Introduction

In November 2008, Ashland Advanced Materials LLC (AAM) applied for entry into the New York State Department of Environmental Conservation's (NYSDECs) Brownfield Cleanup Program (BCP) for an approximately 15 acre Site located at 6100 and 6200 Niagara Falls Boulevard, in Niagara Falls, New York. The Site location is illustrated on Figure 1-1. The Site is the location of a former graphite manufacturing facility and is comprised of two adjacent property parcels with addresses of 6100 and 6200 Niagara Falls Blvd., in the City of Niagara Falls.

Upon acceptance into the BCP, AAM (volunteer) will enter into a Brownfield Cleanup Agreement (BCA) with the NYSDEC. The volunteer plans to redevelop the Site for production of advanced carbon and graphite engineered materials and services that are essential to green technologies associated with solar energy, fuel cell generators, photovoltaic solar cells, and electric battery markets. Malcolm Pirnie, Inc. (Malcolm Pirnie) has prepared this Remedial Investigation Work Plan (RIWP) for investigation of the Site in accordance with the NYSDEC BCP requirements.

1.1. Site History

The site was owned by Niagara Falls Power Company until 1939. In the late 1950's, Great Lakes Carbon Corporation began operations consisting of the production of graphite. Portions of the site were used as a research and development for the production of different types and shapes of graphite. Horsehead Industries purchased the property and operations in 1988. In 1992 the site and operations were sold to Sigri Corporation. Sigri Corporation changed its name to SGL Carbon in 1995. The Site (and buildings) are currently vacant. The last occupant, SGL Carbon, vacated the property in 2002. Manufacturing operations have not been conducted since 1998.

1.2. Previous Investigations

To date there have been two environmental investigations at the Site, a Phase I in 2002 and a Phase II Investigation in 2008.

1.2.1. Phase I ESA

The Phase I Environmental Site Assessment (ESA) was completed by Conestoga Rovers & Associates (CRA) of New York in September 2002. However, the Phase I was performed on the eastern 6.2 acre parcel only. The findings of the Phase I ESA are listed below:

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ASHLAND ADVANCED MATERIALS
SITE LOCATION MAP
6200 NIAGARA FALLS BOULEVARD
NIAGARA FALLS, NEW YORK

FIGURE 1-1

- The Site was included in the following State and Federal environmental databases:
  - No Further Action Planned (NFRAP) Sites - after being delisted from the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) list.
  - Resource Conservation and Recovery Information System - Small Quantity Generator (RCRIS-SQG) - pertaining to facilities that generate between 100 kg and 1,000 kg of regulated hazardous waste per month.
  - Toxic Chemical Release Inventory System (TRIS) - pertaining to facilities that release toxic chemicals to the air, water, and land in reportable quantities under SARA Title III.
  - Petroleum Bulk Storage (PBS) - pertaining to facilities that have petroleum storage capacities in excess of 1,100 gallons and less than 400,000 gallons.
  - Leaking Storage Tank (LST) – Pertains to incident reports at facilities where storage tank leaks have been reported since April 1, 1986. In 1988 a diesel storage tank leak was reported at the Plant 1 area of the Great Lakes Carbon Corporation facility, approximately 1200 feet west of the proposed BCP Site.
- Historic aerial photos contain evidence of industrial Buildings on site, a landfill adjacent to the northern site boundary, a gas station to the south of the Site.
- Documentation of an on-site release of extrusion oil in 1981.
- The Site inspection resulted in documentation of conditions and contents of site Buildings, fill material present on the northern portion of the Site including; construction debris, wood, graphite, carbon, coke, and sand. Black fine grained carbon, graphite, sand, and coke were observed on the ground surface throughout the Site.
- Interviews with Site personnel revealed:
  - A former 10,000 gallon fuel oil UST, with no closure documentation found.
  - Primary chemicals and raw materials used on Site included petroleum coke, extrusion oil, petroleum oils and greases, mineral oils, binder coal tar pitch, QA/QC lab chemicals, graphite, petroleum pitch, wood chips, ethylene glycol, silica sand, and general building maintenance supplies.
  - Two 55-gallon drums of unidentified liquid stored in the western portion of Building 103.
  - The site was considered a major source of air emissions and operated under a NYSDEC Title V permit which expired on April 5, 2005.

- Following a PCB assessment at the site, all PCB containing equipment was reportedly either removed from the site or the PCB oil removed and replaced with non-PCB containing fluids.
- In 1991, a press located in the northern portion of Building 103 was the source of a release of hydraulic oil to a concrete sump.
- Petroleum stains were observed on the concrete floor near the extrusion press.

- The Phase I identified the following Recognized Environmental Conditions (RECs):

- Historic Site operations – Heavy manufacturing of extruded carbon products since 1939.
- On-site fill material.
- Documented spills and releases.
- Pits, sumps, trenches.
- Adjacent land use of active solid waste landfill, closed hazardous waste landfill.

A copy of the Phase I is provided in Appendix A.

1.2.2. Phase II Site Investigation

Based on the findings of the Phase I ESA, a Phase II site investigation was completed by WSP Environment & Energy in June, 2007. Six soil borings, one temporary monitoring well, two existing monitoring wells, six test pits, one sewer sediment sample, and one sump-water sample were advanced, excavated, or sampled at areas of interest within the BCP Site. Borings were advanced to depths of up to 16 feet below ground surface (bgs). Fill material consisting of sand, gravel, construction debris (concrete, wood, glass, and asphalt), silty sand, and silty clay was encountered in the borings at thicknesses up to 8 feet. The greatest thickness of the fill materials exists in the northern portion of the site, and has been referred to as former landfill materials in the previous investigation. Beneath the fill was native soil consisting of dense clay. Groundwater was encountered at four feet bgs at four of the borings; six feet bgs in the north western portion of the site in the former landfill area and eleven feet bgs in the southeastern portion of the site, east of Building No. 2. Test boring logs from the Phase II investigation were not readily available. Three soil samples were collected from the soil borings and submitted for off-site chemical analyses of target compound list (TCL) volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and target analyte list (TAL) metals. One composite soil sample was collected from the test pits and submitted for toxicity characteristic leaching procedure (TCLP) VOCs, TCLP SVOCs, polychlorinated biphenyl's (PCBs), TCLP metals, TCLP pesticides and herbicides, cyanide, sulfide reactivity, pH, and flashpoint. Six groundwater samples were collected from the temporary monitoring wells, in-situ samples from soil borings, and two existing monitoring wells. The groundwater samples and the water sampled collected from the

sump in Building three were analyzed for TCL VOCs, TCL SVOCs, and TAL metals. The sediment sample from the sewer was analyzed for TCL SVOCs, and TAL metals.

Seven sub-slab soil vapor samples were also collected from buildings: Building No. 2 (two samples), Building No. 3 (one sample), and Building No. 4 (three samples). In addition, three indoor air samples were collected from Building No. 4. The air samples (sub-slab and indoor) were analyzed for VOCs according to USEPA method TO-15.

- Findings of the Phase II include:
  - Fill material up to eight feet thick containing sand, gravel, concrete, glass, asphalt, and wood.
  - Piles of landfill material up to ten feet high containing carbon, graphite, ash, and construction or demolition (C&D) debris.
  - Concentrations of several organic compounds and metals exceed soil cleanup objectives (SCOs) for restricted industrial use, including several PAHs, some up to two orders of magnitude above the SCOs, in three of the four soil samples.
  - Groundwater contained chrysene at concentrations up to four orders of magnitude above the Class GA groundwater standard and several metals above these standards.
  - Soil vapor beneath three sampled buildings (Buildings No.2, 3, and 4) contained organic compounds at concentrations requiring additional sampling. At one of these buildings (Building No. 2), the concentrations of 1,1,1-TCA and TCE were detected at levels at which mitigation is recommended by the NYSDOH. VOCs were also present in indoor air in one of these buildings at concentrations warranting further investigation and possibly mitigation.

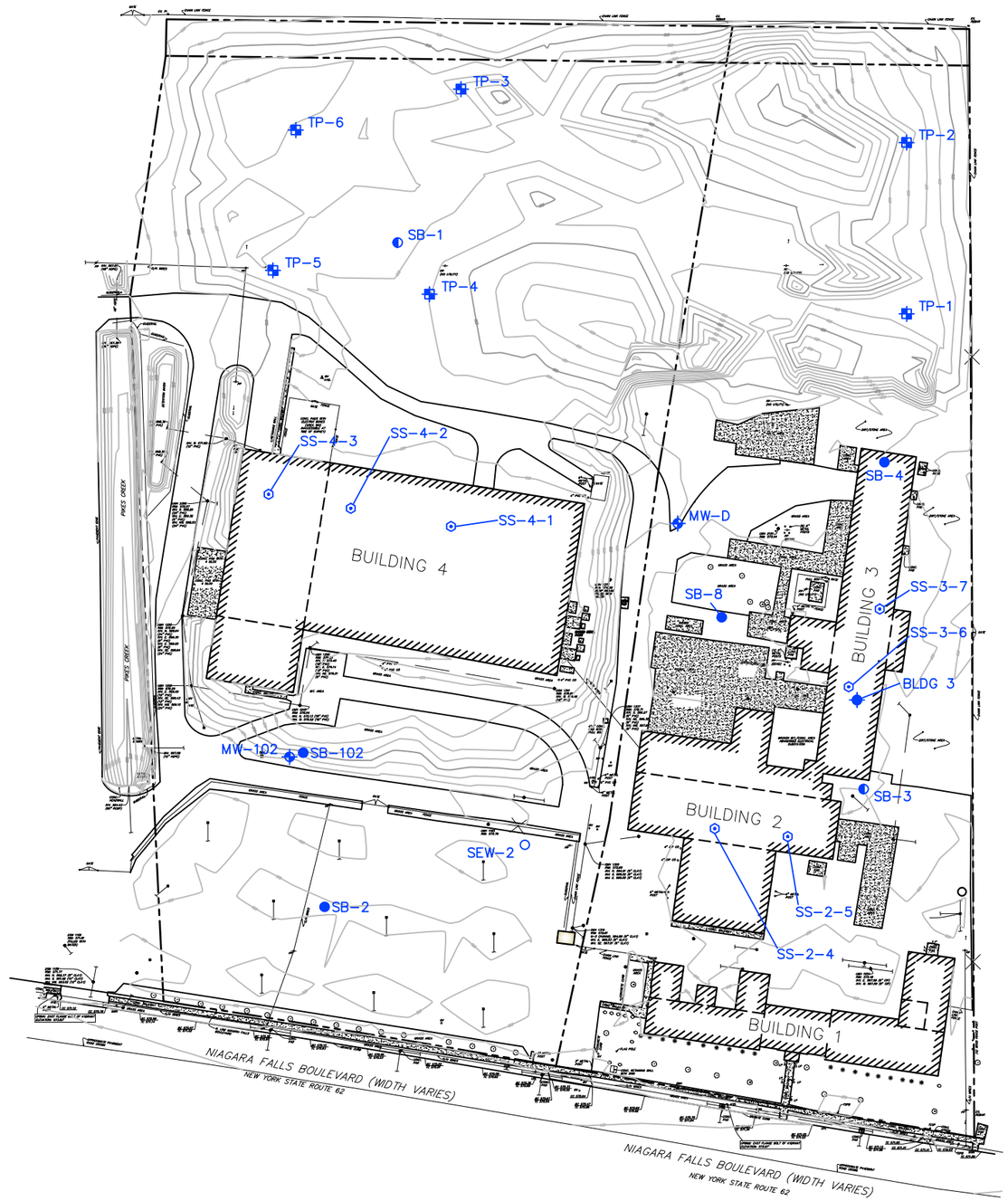
1.2.3. Historic Stormwater Monitoring

Historical stormwater monitoring for outfalls 004, 005, 006, and 009 located on the proposed BCP Site indicate elevated levels of SVOCs, including PAHs and metals (e.g. chromium, copper, iron, lead, and zinc). These outfalls discharge to Pikes Creek along the western boundary of the BCP Site and Pikes Creek ultimately discharge to the Niagara River.

Figure 1-2 illustrates the locations of the soil borings, test pit, and storm sewer sample locations that were drilled and sampled within the BCP Site as part of the overall Site Phase II investigation. A copy of the Phase II Investigation report is provided in Appendix A.

1.3. Site Reconnaissance

On July 10 and 24, 2008, in support of the preparation of the BCP application, Malcolm Pirnie conducted a Site reconnaissance to observe current Site conditions and the



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LEGEND:

- TP-4 – PHASE II TEST PIT LOCATION
- MW-102 – PHASE II MONITORING WELL LOCATION
- SB-2 – PHASE II SOIL BORING LOCATION
- SB-3 – PHASE II MONITORING WELL AND SOIL BORING LOCATION
- SEW-2 – PHASE II SEWER SAMPLE LOCATION
- – PHASE II SUMP SAMPLE LOCATION
- – SUB-SLAB SOIL VAPOR

60 0 60 120

SCALE: 1" = 120'

6407FIG1-2

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BROWNFIELD CLEANUP PROGRAM
REMEDIAL INVESTIGATION WORK PLAN
ASHLAND ADVANCED MATERIALS SITE
NIAGARA FALLS, NEW YORK

SITE PLAN

SCALE: 1" = 120'

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NOVEMBER 2008

FIGURE 1-2

locations of Recognized Environmental Conditions (RECs) as reported in the Phase I and Phase II investigations. Site conditions were photo documented and a few RECs not specifically mentioned in the Phase I were observed at the site; these include:

Building No. 2:

- Possible UST fill pipe south of Building No. 2

Building No. 3:

- Staining on ground surface and concrete pad west of Building No. 3

Building No. 4:

- Staining on interior concrete floor in three separate locations
- Drums and multiple 5-gallon buckets of unknown contents and significant oily floor staining located in the northwestern portion of the building

Northern Fill Area:

- Several fill mounds consisting of graphite and various debris

1.4. Site Reuse Plan

AAM is proposing to reuse the site at 6100 and 6200 Niagara Falls Blvd, Niagara Falls, NY for graphite production. The existing buildings and equipment will be upgraded for production of advanced carbon and graphite engineered materials essential to the solar energy, fuel cell generators, photovoltaic solar cells, and battery markets. This site reuse does not include any building expansions or new construction at this time. AAM is planning to operate a state-of-the-art ultra low emission, ultra-high temperature heat-treating and materials processing facility to produce raw materials, finished goods and services to companies around the world that are involved in the implementation of these green technologies. The project will include utility upgrades, repairs to the switchgear, replacement of the burnt-out main transformer, machinery and equipment purchases, and other miscellaneous facility improvements and expenditures, with a total five year project cost of approximately $19,290,000. Production at the facility is expected to begin during the fourth quarter of 2008 or first quarter 2009, with the plant at planned capacity by third quarter of 2009.

Capacity exists and is conveniently available for all required utilities for the Project, including sanitary sewer, domestic water, storm water, gas, electric, and communications.

2. Purpose

A Remedial Investigation is planned to further characterize the Site to support planned development in accordance with the requirements of the BCP. Based on the historical use of the Site and documented characterization results; Malcolm Pirnie has developed a scope of work to further investigate and characterize surface and subsurface conditions. This Work Plan details specific tasks that will facilitate Site characterization and compliance with the NYSDEC BCP requirements. Specifically, when used in concert with results of previous investigations, the findings of the remedial investigation will be used to:

- Describe the amount, concentration, persistence, mobility, form (e.g., solid, liquid), and other significant characteristics of the contamination present.
- Define hydrogeologic factors (e.g., depth to saturated zone, hydrologic gradients (if possible), proximity to a drinking water aquifer, and wetlands proximity).
- Define the aerial extent of the Site fill material and characterize the chemical composition of the fill.
- Define the potential extent to which the substances are expected to migrate, and whether potential future migration may pose a threat to human health or the environment.
- Determine the extent to which contaminant levels pose an unacceptable risk to public health and the environment.
- Provide sufficient information to allow for the identification of potentially feasible remedial alternatives.

The Remedial Action Objectives (RAOs) for the Site will be developed based on the contaminant characterization results, exposure pathways, and risk evaluation data. Based on our knowledge of potential Site issues, the RAOs for the Site likely involve preventing direct exposure to contaminants identified in impacted soil to minimize potential risks to human health.

3. Scope of Work

The Phase II investigation provided documentation of impacts to the subsurface soil/fill, groundwater, stormwater, sub-slab soil vapor, and indoor air at several areas within the BCP Site. These will be further characterized to determine the nature and extent of contamination.

The BCP Site has not been sufficiently characterized for remedial purposes. The proposed RI will characterize areas of interest (AOIs) identified during the Phase I and Phase II Investigations. To further characterize the BCP Site, samples will be collected from the subsurface soil/fill in the northern portions of the Site, and additional soil borings in previously identified AOIs. Additional monitoring wells will be installed for groundwater characterization, both at up gradient and down gradient locations on the BCP site. Indoor air sampling will be performed to characterize indoor air quality and sub-slab soil vapor samples will be used to aid in design of remedial systems if necessary. Data collected during the RI will be used to identify potential health risks, if present, and to evaluate remedial alternatives.

The investigation will include drilling approximately 17 soil borings, installation of seven groundwater monitoring wells, and excavation of up to 10 test pits. Sampling will include a minimum of 24 soil samples from subsurface soils and fill materials, 10 groundwater samples, 10 sub-slab soil vapor samples, nine indoor air samples, seven surface water samples, and two sediment samples.

Subsequent to NYSDEC approval of the RI Work Plan and Citizens Participation Plan, (Appendix B) and requisite public comment period, Malcolm Pirnie will initiate the remedial investigation and prepare a report of findings. The major tasks and elements associated with this Work Plan are described in detail within this section. Proposed drilling, test pit, monitoring well, sub-slab soil vapor, and indoor air sampling locations are illustrated on Figure 3-1. Actual sample locations may vary based on field conditions/observations and logistics. Table 3-1 provides a summary of samples to be collected during the RI.

3.1. Subsurface Investigation

The BCP Site has been characterized as having a former landfill area in the northern portion of the property. Previous investigations have indicated that this area is consists of up to eight feet of fill materials as well as several fill mounds at the surface. Several other AOIs have been identified throughout the Site. To characterize the subsurface at

LEGEND:

PHASE II SAMPLE LOCATIONS

- TP-4 – TEST PIT
- MW-102 – MONITORING WELL
- SB-2 – SOIL BORING
- SB-3 – MONITORING WELL AND SOIL BORING
- SEW-2 – SEWER SAMPLE
- – SUMP SAMPLE
- – FILL MOUNDS

PROPOSED SAMPLE LOCATIONS

- – TEST PIT
- – SOIL BORING
- – MONITORING WELL
- – SUB-SLAB SOIL VAPOR
- – SURFACE WATER SAMPLE
- – SEDIMENT SAMPLE
- – INDOOR AIR SAMPLE
- – OUTDOOR AIR SAMPLE
- – COMPOSITE SOIL SAMPLE (FILL MOUNDS)
- – GROUNDWATER FLOW DIRECTION

60 0 60 120

SCALE: 1" = 120'

6407FIG3-1

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BROWNFIELD CLEANUP PROGRAM
REMEDIAL INVESTIGATION WORK PLAN
ASHLAND ADVANCED MATERIALS SITE
NIAGARA FALLS, NEW YORK

SAMPLE LOCATION MAP

SCALE: 1" = 120'

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FIGURE 3-1

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TABLE 3-1

Analytical Program Summary
Remedial Investigation
Ashland Advanced Materials, LLC Site
Niagara Falls, New York

Sample Media	Number of Samples				Analyses
	Field Samples	Duplicates	MS/MSD Samples	Trip Blanks (VOCs)	
Subsurface Soil/Fill (16 sampled boring locations) [1]	20	2	2/2	5	TCL VOCs, SVOCs, Pesticides, PCBs, TAL Metals, and Cyanide
Subsurface Soil/fill (4 at-grade test pit locations, and 3 fill mound composite samples)	7	1	1/1	2	TCL VOCs, SVOCs, Pesticides, PCBs, TAL metals, and cyanide
Groundwater [(2)] (7 new monitoring wells and 3 existing monitoring wells)	10 x 2 events	1 x 2	1/1 x 2	2 x 2	TCL VOCs, SVOCs, Pesticides, PCBs, TAL total metals, and cyanide
Surface Water (If present)	7	1	1/1	1	TCL VOCs, SVOCs, Pesticides, PCBs, TAL total metals, and cyanide
Sediment / (Contingent samples if no surface water is present)	2 / (5)	1	1/1	1	TCL VOCs, SVOCs, Pesticides, PCBs, TAL metals, cyanide, and TOC
Indoor Air	8	1	NA	NA	VOCs by TO15
Outdoor Air	1	NA	NA	NA	VOCs by TO15
Sub-slab Soil Vapor	10	1	NA	NA	VOCs by TO15

[1] Includes estimated second additional sample collected at 25% of the boring locations.

[2] Two rounds of groundwater samples planned.

the Site, test borings will be advanced at various locations throughout the site, and test pits will be excavated in the northern fill area and fill mounds.

3.1.1. Soil Boring Program

A soil boring program will be implemented to characterize the subsurface soil/fill and groundwater at the BCP Site. Soil borings, soil samples, and groundwater samples are planned at AOIs identified in the Phase I and Phase II investigations. The soil boring program will consist of an estimated 25 soil borings advanced at predetermined AOIs, proposed monitoring well locations, and other locations selected to characterize the Site. These AOIs will be investigated during the RI to determine the source and extent of the contamination. Eighteen proposed soil boring locations, not planned for conversion to monitoring wells, will be located as follows:

- Two soil borings at the former electrical substation between Building No.2 and Building No.3.
- Two soil borings in the parking area south of Building No.4.
- One soil boring east of Building No.2 at a chimney/furnace along the eastern property line.
- Two soil borings in a former underground storage tank (UST) area north of former Building No.102 (north of Building No. 2 and west of Building No. 3).
- One soil boring at a former drum storage area west of Building No.3 and northeast of Building No.4.
- One soil boring near the former hazardous waste storage area at the northeast end of Building 1.
- Nine locations selected to characterize the Site proper.

Seven soil borings will be advanced to further characterize subsurface soils and serve as temporary monitoring well locations. The proposed soil boring / temporary monitoring well locations are as follows:

- Two up-gradient wells in north fill area.
- One up-gradient well along east central property line.
- Two down gradient wells, one in the southwest corner and one in the south-central portion of the Site, east of the parking area.
- One northeast of Building No.1 near the former hazardous waste storage area, and down gradient of an oil storage container.
- One north of Building No.4 near open pipes located outside of the building and adjacent to concrete stands of a possible former AST, also down gradient of north fill area.

Figure 3-1 illustrates the proposed subsurface soil boring locations.

3.1.2. Subsurface Soil/Fill Sampling

All soil borings will be advanced using direct push drilling methods. Borings will be advanced through the soil/fill to depths reaching minimum of two feet into the underlying native soils, or to depths sufficient to set temporary monitoring wells. Based on the Phase II borings within the BCP Site, the depth to native soil was approximately eight feet bgs. The planned drilling method advances and retrieves soil core samples at four foot intervals; therefore the total depth of the borings is anticipated to be a maximum of 16 feet. If visually observed contamination or lithologic conditions warrant, certain borings may be advanced deeper to further characterize subsurface conditions or facilitate the installation of temporary monitoring wells.

A direct push sampling system capable of collecting continuous samples will be used, and may include dual tube sampling or a large bore sampler, depending on subsurface conditions. If the subsurface materials "slough" into the open borehole to the extent at which the subsequent samples are compromised or recoveries of undisturbed soils are considerably reduced, the dual tube sampling system will be used at the BCP Site. If subsurface conditions result in minimal "sloughing", the large bore sampler will be used. Both sampling systems are capable of producing an open borehole approximately three inches in diameter.

If drill rig refusal is encountered before reaching a minimum of two feet into the native clay soil layer, the boring will be abandoned and attempted at an adjacent location. This process will continue until the required depth of a minimum of two feet into native material is reached.

Upon retrieval of each soil/fill core, the soil/fill samples will be screened for total organic vapors using a photo-ionization detector (PID). The organic vapor measurements will be recorded and the subsurface soils will be described on boring logs by a Malcolm Pirnie geologist. At 16 boring locations, samples will be collected from the discrete depth interval that displays the greatest evidence of contamination, if present. The depth from which samples are collected will be determined based on visual / olfactory observations and PID measurements. Subsurface fill samples will be analyzed for VOCs, SVOCs, Pesticides, PCBs, TAL metals, and cyanide. For cost estimating purposes it has been assumed that more than one soil interval at an individual soil boring may warrant sampling for analytical characterization. It is assumed that approximately 25% of the 16 sampled subsurface soil borings may require up to two analytical samples collected from the fill materials or native soils, if necessary. The additional soil samples will also be analyzed for VOCs, SVOCs, Pesticides, PCBs, TAL metals, and cyanide. A summary of proposed samples and analyses is provided in Table 3-1.

All non-dedicated, down hole sampling equipment will be decontaminated between soil boring locations in accordance with accepted drilling practices using a high-pressure hot water "steam" cleaner or scrubbed using Alconox™ and a hot water wash followed by clean potable water rinse. After drilling and sampling is complete at each boring location, the boring will be grouted from total depth to grade level with a grout mixture of 95% cement and 5% bentonite. Where paved surfaces required penetration, these paved surfaces will be repaired with similar (concrete or asphalt) materials by the drilling subcontractor.

Soil cuttings, decontamination water, and well purge water will be containerized in 55-gallon drums pending analytical results of the RI. Drums will be clearly labeled and stored on wooden pallets in one of the on-Site buildings pending disposal by the client. Disposable sampling equipment including, spoons, gloves, bags, paper towels, etc. that came in contact with environmental media will be double bagged and disposed as municipal trash in a facility trash dumpster as non-hazardous trash.

3.1.2.1. Test Pit Soil/Fill Sampling

A test pit excavation and sampling program will be implemented to thoroughly characterize the subsurface soil/fill and the above-grade stockpiles of fill in the northern portion of the BCP Site (north fill area) identified in the Phase I and Phase II investigations. The test pit boring program will consist of an estimated eight test pits in the level areas (at-grade test pits), and six test pits in the fill stockpiles. Test pits will be excavated with a small excavator or rubber tire backhoe to native soils or to the base of the fill stockpiles and surrounding ground surface. Figure 3-1 illustrates the proposed subsurface and fill stockpile test pit locations.

The excavated soil/fill spoils will be screened for total organic vapors using a photo-ionization detector (PID). A Malcolm Pirnie geologist will record the organic vapor measurements, dimensions of the test pits, and visual descriptions of the fill and soil/fill materials on test pit logs. At four of the eight at-grade test pits, samples will be collected from the discrete depth interval that displays the greatest evidence of contamination, if present. The depth from which samples are collected will be determined based on visual / olfactory observations and PID measurements. The stockpile samples will consist of a five-point composite sample collected from four sides and the top of the fill stockpile. The VOC sample will be collected from the sidewall of the test pits as a discrete sample point. All subsurface and stockpile fill samples will be analyzed for VOCs, SVOCs, Pesticides, PCBs, TAL metals, and cyanide. A summary of the proposed samples and analysis are provided in Table 3-1.

3.1.3. Groundwater Monitoring Well Installation and Sampling

3.1.3.1. Site Hydrogeologic conditions

Based on data from the June 2007 Phase II investigation, groundwater was encountered at four feet bgs throughout most of the site soil borings and temporary monitoring wells. An exception to this was the northwest corner of the site in the north fill area, where ground water was as deep at 11 bgs. According to the Phase II investigation, water elevation measurements indicated a groundwater flow to the south.

The Site is located in a developed industrial area that has been used for industrial purposes and landfills since the 1930s. As such, there are many potential sources of groundwater contamination within close proximity of the BCP Site. Groundwater was sampled at the site in June of 2007 as part of the Phase II investigation. Results of the groundwater sampling indicate that metals and semi-volatile organic compounds are present at concentrations above NYSDEC Class GA groundwater standards.

Based on the hydrogeologic conditions encountered during the investigations described above, it is expected that groundwater will be encountered at depths ranging between four and 12 feet.

3.1.3.2. Monitoring Well Installation

To adequately characterize the shallow groundwater at the BCP Site, monitoring wells are proposed in up-gradient locations (north and east property boundaries) as well as two down gradient locations along the southern property boundary at Niagara Falls Boulevard. Two additional monitoring wells will be installed in the interior potions of the site near Building No. 2 and Building No. 4. Where groundwater is encountered in a soil boring, a temporary monitoring well will be installed in the three-inch diameter borehole using 1" ID schedule 40 PVC well screens of 0.01" slot size. Screen length will depend on the thickness of fill and depth to groundwater. Anticipated screen length is 5 feet. Once the well screen and riser are placed in the borehole center, the well annulus will be filled with clean silica sand to a minimum of 6-inches above the sand pack interval. A minimum 6" thick bentonite seal will be placed on top of the sand pack to not more than 6" below grade. A J-plug will cap the PVC well which will be protected by a flush-mount curb box. The proposed well locations are illustrated on Figure 3-1.

3.1.3.3. Well Development

The newly installed monitoring wells will be developed no sooner than 24 hours after construction has been completed. The development procedure will require purging of the groundwater and periodically surging the water in the well to loosen and remove suspended fines from the well screen and sand pack. Measurements of the water volume removed and water quality parameters including temperature, pH, conductivity, and turbidity will be recorded at regular intervals throughout the development process.

Development will continue until water quality measurements stabilize to within 10% of the previous measurement.

3.1.3.4. Groundwater Sample Collection

Groundwater will be collected from each temporary well and three existing monitoring wells using low flow sampling techniques by dedicated plastic flex tubing and a peristaltic pump. If low-flow sampling is not feasible due to insufficient groundwater recharge rate, new and dedicated disposable bailers may be used to collect the groundwater samples. If sufficient groundwater volume is available, each well will be sampled for TCL VOCs, SVOCs, Pesticides, PCBs, TAL total metals, and cyanide.

If groundwater turbidity is greater than 50 NTUs, a filtered (dissolved) metals sample will be collected along with the unfiltered (total) metals sample.

Groundwater field parameters will be monitored during well purging prior to sampling including pH, specific conductivity, temperature, turbidity, and dissolved oxygen.

All groundwater samples will be collected in the pre-cleaned and pre-preserved laboratory sample bottles in accordance with protocols for analyses shown on Table 3-1. Appropriate QA/QC samples will be collected per sampling event including one trip blank, one MS, one MSD, and one field duplicate sample. Subsequent to sample collection all groundwater samples will be placed on ice and shipped under chain of custody to the selected analytical laboratory. Two groundwater sampling events (fall and spring) will be conducted to assess relative seasonal fluctuations in groundwater conditions and flow.

3.2. Surface Water / Sediment Sampling

Historical stormwater sampling data has shown that on-Site stormwater contains elevated concentrations of metals and semi-volatile organic compounds, including PAHs. These detected constituents are similar to those found in on-Site soil/fill and groundwater. To further evaluate the sources and the extent to which past activities may have impacted the stormwater and sediments exiting the site via Pikes Creek, a surface water and sediment sampling program will be conducted along Pikes Creek at the stormwater outfalls, and one stormwater catch basins that exits the site to the east.

3.2.1. Surface Water Sampling

Surface water samples will be collected at the following locations:

- Each outfall location along Pikes Creek
  - Outfall 004 is the southernmost outfall and surface water sampling point along Pikes Creek before it exists the site

  - Outfall 005 which receives water from the northwestern portions of the site near Building No. 3.

- In the detention basin northwest of Building No.4 at outfall 009 and the unnamed outfall south of outfall 009.
- At the outfall of a pipe (six-inch PVC) identified coming from the west bank of the detention basin northwest of Building No.4 to Pikes Creek.
  - This structure was noted on a historical site plan map (date unknown), and was identified as discharge 009. This map indicates that the detention basin may discharge to Pikes Creek.
- At outfall 006 in the southeastern corner of the site which receives runoff from the southeastern portions of the site, east of Building No.2.
- At the upstream-most point on Pikes Creek in the northwestern corner of the site.

3.2.1.1. Surface Water Sample Collection

Pikes Creek is an intermittent stream and may not contain sufficient quantities of water for sampling. If surface water is not present during the remedial investigation tasks, sediment samples will be collected at the locations described above. If sufficient surface water volume is available, samples will be collected at each location and analyzed for TCL VOCs, SVOCs, pesticides, PCBs, TAL metals (total and dissolved), and cyanide. The downstream surface water samples will be collected first, followed by the sediment samples.

If sufficient water volume is present in Pikes Creek, samples will be collected by carefully dipping unpreserved sample bottles into the stream, and removing the lid below the surface of the water to avoid collecting samples at the air-water interface. Samples will then be transferred from the unpreserved bottle to the appropriate sample container in accordance with protocols for analyses shown on Table 3-2. All samples will be placed on ice and shipped under chain of custody to the contracted analytical laboratory. The samples collected for dissolved metals will be filtered in the field using 0.45 micron filters. Appropriate QA/QC samples will be collected per sampling event including one trip blank, one MS, one MSD, and one field duplicate sample. Water quality parameters (pH, conductivity, temperature, dissolved oxygen, and turbidity) will be measured in the stream during sampling.

3.2.1.2. Sediment Sample Collection

Sediment samples will be collected at the upstream (northwest property corner) and downstream (outfall 004) surface water sampling points along Pikes Creek. As described above, if surface water is not present during the remedial investigation tasks, sediment samples will be collected at the proposed surface water sampling locations described above. Sediment samples will be analyzed for TCL VOCs, SVOCs, pesticides, PCBs, TAL metals, cyanide, and total organic carbon (TOC).

Table 3-2
EPA Method TO-15 Compound List
Remedial Investigation
Ashland Advanced Materials, LLC Site

Compound	CAS Number	Proposed RL ppbv	NJ TO15	Full TO15
Acetone (2-propanone)	67-64-1	5.0	X	X
Benzene	71-43-2	0.20	X	X
Bromodichloromethane	75-27-4	0.20	X	X
Bromoethene	593-60-2	0.20	X	X
Bromoform	75-25-2	0.20	X	X
Bromomethane (Methyl bromide)	74-83-9	0.20	X	X
1,3-Butadiene	106-99-0	0.20	X	X
2-Butanone (methyl ethyl ketone)	78-93-3	0.50	X	X
Carbon disulfide	75-15-0	0.50	X	X
Carbon tetrachloide	56-23-5	0.20	X	X
Chlorobenzene	108-90-7	0.20	X	X
Chloroethane	75-00-3	0.20	X	X
Chloroform	87-66-3	0.20	X	X
Chloromethane (methyl chloride)	74-87-3	0.20	X	X
3-chloropropene (allyl chloride	107-05-1	0.20	X	X
2-chlorotoluene (o-chlorotoluene)	95-49-8	0.20	X	X
Cyclohexane	110-82-7	0.20	X	X
Dibromochloromethane	124-48-1	0.20	X	X
1,2-dibromoethane	106-93-4	0.20	X	X
1,2-dichlorobenzene	95-50-1	0.20	X	X
1,3-dichlorobenzene	541-73-1	0.20	X	X
1,4-dichlorobenzene	106-46-7	0.20	X	X
dichlorodifluoromethane	75-71-8	0.20	X	X
1,1-dichloroethane	75-34-3	0.20	X	X
1,2-dichlorethane	107-06-2	0.20	X	X
1,1-dichloroethene	75-35-4	0.20	X	X
1,2-dichloroethene (cis)	155-59-2	0.20	X	X
1,2-dichloroethene (trans)	156-605	0.20	X	X
1,2-dichloropropane	78-87-5	0.20	X	X
Cis-1,3-dichloropropene	10061-01-5	0.20	X	X
Trans-1,3-dichloropropene	10061-02-6	0.20	X	X
1,2-dichlorotetrafluoroethane (Freon 114)	76-14-2	0.20	X	X
Ethylbenzene	100-41-4	0.20	X	X
4-Ethyltoluene (p-ethyltoluene)	622-96-8	0.20	X	X
n-heptane	142-82-5	0.20	X	X
hexachlorobutadiene	87-68-3	0.20	X	X
n-hexane	110-54-3	0.20	X	X
methylene chloride	75-09-2	0.50	X	X
4-methyl-2-pentanone (MIBK)	108-10-1	0.50	X	X
MTBE (methyl tert-butyl ether)	1634-04-4	0.50	X	X
Styrene	100-42-5	5.0	X	X
Tertiary butyl alcohol (TBA)	75065-0	0.20	X	X
1,1,2,2-tetrachloroethane	79-34-5	0.20	X	X
Tetrachloroethene (PCE)	127-18-4	0.20	X	X
Toluene	108-88-3	0.50	X	X
1,2,4-trichlorobenzene	120-82-1	0.20	X	X
1,1,1-trichloroethane	71-55-6	0.20	X	X
1,1,2-trichloroethane	79-00-5	0.20	X	X
1,1,2-trichloro-1,2,2-trifluoroethane (Freon TF)	76-13-1	0.20	X	X
Trichloroethene (TCE)	79-01-6	0.20	X	X
Trichlorofluoromethane (Freon 11)	75-69-4	0.20	X	X
1,2,4-trimethylbenzene	95-63-6	0.20	X	X
1,3,5-trimethylbenzene	108-67-8	0.20	X	X
2,2,4-trimethylpentane	540-84-1	0.20	X	X
Vinyl chloride	75-01-4	0.20	X	X
Xylenes (m&p)	1330-20-7	0.20	X	X
Xylenes (o)	95-47-6	0.20	X	X
1,2-dichlorethene (total)	540-59-0	0.20		X
1,4-dioxane	123-91-1	5.0		X
Isopropyl alcohol	67-63-0	5.0		X
Methyl butyl ketone	591-78-6	0.50		X
Methyl methacrylate	80-62-6	0.50		X
Naphthalene (upon request only)	91-20-3	0.50		X
tetrahydrofuran	109-99-9	5.0		X

[1]NJ compounds have NJ-assigned compound names.
RL = Reporting limit

With the exception of the VOC analysis sample, sediment samples will consist of a three-point composite sample at each sediment sampling point. The three-point composite sample will ensure an accurate representation of the sediment quality in the area of the outfalls. One of the composite points will be located directly beneath the outfall pipe. At each location, any overlying vegetation or debris will be removed to expose the underlying sediments. The sediment samples will be collected from the stream bed using pre-cleaned stainless steel scoops. The composite samples will be thoroughly mixed in pre-cleaned stainless steel bowls prior to filling the appropriate sample containers in accordance with protocols for analyses shown on Table 3-2. The VOC analysis sample will be collected directly from one of the composite points, and immediately placed in the appropriate sample container. Appropriate QA/QC samples will be collected as part of the sediment sampling event, including one MS, one MSD, and one field duplicate sample.

3.3. Indoor Air Quality Sampling

Based on the results of the Phase II investigation conducted at the Site, indoor air quality may be compromised by the presence of VOCs above the soil cleanup objectives (SCOs) in the subsurface soils or groundwater. A potential pathway exists whereby the VOC compounds in the vapor phase may migrate from the soil and could affect the quality of air in the on-Site buildings. Indoor air sampling conducted at Building No.4 during the Phase II investigation confirms the presence of VOCs in the indoor air at concentrations that warrant further investigation.

To further evaluate the potential for intrusion of organic vapors originating from soil (and/or groundwater) underlying the Site, Malcolm Pirnie will collect and analyze subsurface soil gas vapor (described in Section 3.3) beneath the Site buildings, and indoor air samples. The indoor air samples will be collected in all on-Site buildings (Buildings No.1, 2, 3, and 4). The proposed indoor air sampling locations are shown on Figure 3-1. These locations are approximate and are based on the previously documented AOIs. The actual sample locations may vary based on existing operations, including presence of machinery or personnel present in the area.

Prior to collecting the indoor air samples, an indoor air environment profile will be established. This will include a thorough inspection of all of the on-Site buildings. The inspection will document the following:

- Create an inventory of all products at the site which may contain VOCs or other chemicals of concern.
- Remove any confounding sources from the site, if possible.
- Vapor measurements with photoionization detectors (PIDs) will be used during the inspection and the sampling event to help evaluate potential gross (high concentration) interferences.

- Determine whether windows and doors are to be closed and ventilation used prior to and during sampling.
- Determine whether normal daily operations are to occur at the site during sampling.
- Building conditions including integrity of floor slabs noting the presence and locations of cracks, open fill pipes, pits or sumps.
- Presence or absence of heating and ventilation systems.
- Noting process systems or equipment involving air exchanges.

The indoor air samples will be collected in stainless steel Summa canisters supplied by the subcontracted laboratory. Each Summa canister will be under a vacuum of approximately 29.9 inches of mercury (Hg), and fitted with certified clean flow controllers, set to collect an 8-hour work day sample. After collecting the 8-hour workday sample, each canister will be shipped to the subcontracted analytical laboratory under chain-of-custody forms, and analyzed for VOCs using USEPA Compendium Method TO-15. The lists of compounds analyzed by method TO-15 as well as the method reporting limits are provided in Table 3-2.

3.4. Sub-slab Soil Vapor Sampling

Based on the results of the Phase II investigation conducted at the Site, subsurface soil/fill material on Site has been shown to contain VOCs, SVOCs including carcinogenic polycyclic aromatic hydrocarbons (PAHs), and metals above the soil cleanup objectives (SCOs). A potential pathway exists whereby the VOC compounds in the vapor phase may migrate from the soil and could affect the quality of air in the on-Site buildings. Sub-slab soil vapor and indoor air sampling conducted in the on-Site buildings (Buildings No. 2, 3, and 4) during the Phase II investigation confirm the presence of VOCs in the sub-slab soil vapor in all three buildings. Building No.2 had VOC concentrations in the sub-slab soil vapor at levels that require mitigation according to the New York State Department of Health (NYSDOH) Guidance for Soil Vapor Intrusion (NYSDOH, 2006).

To further evaluate the potential for intrusion of organic vapors originating from soil (and/or groundwater) underlying the Site, Malcolm Pirnie will collect and analyze a total of 10 samples of subsurface soil gas vapor beneath the Site buildings. Sub-slab soil vapor samples will be collected in all on site buildings (Buildings No.1, 2, and 4). The proposed soil vapor sampling locations are shown on Figure 3-1 and are based on the previously documented AOIs including staining on the floors, sumps or pits, and differing building sections.

The soil vapor samples will be collected by advancing a small (~1/2") diameter borehole to a maximum depth of one foot below the bottom of the concrete floor slab, to allow for the installation of the soil vapor sampling device. A stainless steel sampling point (KVA Shield Point or similar device) approximately six inches in length will be connected to

Teflon-lined tubing and placed in the borehole. Clean silica sand will be poured around and a minimum of six-inches above the sampling point. A hydrated bentonite powder will then be used to seal the sampling point from the top of the sand pack to the floor surface.

A tracer gas will be used to validate the performance of the sample point seal. Helium tracer-gas testing will be conducted at each sample point to ensure that an effective seal has been established. The helium tracer gas test will be conducted as follows:

1. A small plastic bucket-like container will be inverted over the sampling point. The container will have three drilled holes for; helium introduction, ambient air release, and passage of the sample probe tubing.
2. The container will be filled with laboratory grade helium which will be measured using a helium detector to ensure greater than 90% concentration of helium in the container.
3. Using sampling tubing, a 3-way valve, and a disposable syringe, approximately 1 liter of air/vapor will be purged from the sample point to a Tedlar® bag at a consistent flow rate of less than or equal to 0.2 liters per minute. The sub-slab vapor will be purged into a Tedlar® bag to not influence the indoor air quality.
4. The Tedlar® bag will be tested outdoors using the helium detector capable of reading PPM and percent level concentrations. All meter readings will be recorded.
5. If concentrations > 10% of tracer gas are observed in the Tedlar® bag, the probe seal will be checked, replaced, or enhanced to reduce the infiltration of air. The seal will be retested as described above following repairs.

Prior to sub-slab soil vapor sample collection, an electric peristaltic pump capable of producing a vacuum of at least 20 inches of mercury will be used to purge air from the vapor sampling borehole. Soil vapor will be purged at a rate not greater than 0.2 liters per minute for 15 minutes. Following purging, a grab sample will be collected in a 6-liter Summa canister fitted with a one-hour regulator (using a sampling rate of 0.1 liters per minute) resulting in a sample collection period of one hour per sample. After collecting the sub-slab samples, each canister will be shipped to the subcontracted analytical laboratory under chain-of-custody forms, and analyzed for VOCs using USEPA Compendium Method TO-15. The lists of compounds analyzed by method TO-15 as well as the method reporting limits are provided in Table 3-2.

Based on the findings of the sampling described above, additional sampling may be required to further delineate some areas of contamination and to aid in developing mitigation measures if necessary.

3.5. Site Survey

A topographic base map of the Site was prepared in July 2008. The base map has a scale of one-inch equals 20 feet, with one-foot contour intervals. The map includes pertinent Site features including property boundaries, existing buildings, roadways, fences, visible utilities, and existing monitoring well locations.

The base map was prepared by a New York State licensed surveyor and conforms to specifications for size, distribution and content as established by the USGS National Mapping division. Horizontal location and vertical elevations were established using the New York State Plane Coordinate System and most recent vertical datum.

Following the remedial investigation tasks, additional survey work will be performed to add the investigation point locations (soil borings, monitoring wells, test pits, surface water, and sediment sampling locations) to the base map. Elevations of the ground surface and top of PVC riser will be measured and recorded for each monitoring well.

As required under the BCP agreement, an ALTA survey will be completed after the RI as part of the overall Site development.

3.6. Qualitative Human Health Risk Assessment

A qualitative human health risk assessment will be conducted to determine if the presence and concentrations of chemicals in the environmental media at the Site pose potential human health concerns. The assessment will encompass both on-Site and off-Site risks with the results of the exposure analysis used as one of the criteria to determine the most appropriate future actions at the Site. These may range from no further action, to additional data collection, to quantitative health risk assessment and the establishment of risk-based action levels. The assessment will begin with the construction of a conceptual Site model, a graphic illustration that outlines chemical source areas, possible chemical release mechanisms, environmental media that currently show or may show in the future the presence of chemicals, possible exposure pathways, possible points of exposure for human receptors, possible exposure routes, and possible human receptors. The conceptual model will be based on current Site conditions and surrounding land use as well as the planned future Site and surrounding land uses. For environmental media that may be of concern, qualitative evaluations will be made for the four components that typically comprise a health risk assessment: data evaluation; exposure assessment; toxicity assessment; and risk characterization/uncertainty analysis. In the data evaluation, chemical concentrations in the various media will be compared to appropriate NYSDEC risk-based standards and criteria (e.g., NYSDEC Soil Cleanup Objective and Cleanup Levels, Water Quality Standards, etc.). Chemicals detected in concentrations greater than these standards and criteria will be identified as chemicals of potential concern. In the exposure assessment, an evaluation will be made of the likelihood and magnitude of

exposure to the chemicals of potential concern in environmental media of concern. This will involve outlining possible exposure routes and plausible exposure times, frequencies, and durations. In the toxicity assessment, the toxicity of the chemicals of concern will be outlined. This will include identifying known or suspected carcinogens and/or the target organ/system of concern for noncarcinogenic effects. In the risk characterization, information from the three components will be integrated, to estimate the likelihood and magnitude of possible health risks.

Fact sheets documenting the goals and progress of the project will be prepared at key milestones of the project and distributed to those on the project mailing list. The distribution list is included in the Citizens Participation Plan which is provided in Appendix B.

3.7. Ecological Risk Assessment

A screening-level ecological risk assessment will be conducted in accordance with NYSDEC guidance for performing Fish and Wildlife Impact Analyses (FWIA) for Inactive Hazardous Waste Sites (NYSDEC, 1994). The purpose of the assessment is to identify potential wildlife and vegetative receptors that may be exposed to impacted media on the Site and to determine if such exposure poses the potential for adverse ecological health effects. Steps I (Site Description) and IIA (Pathway Analysis) of the FWIA guidance will be conducted based on the results of the Site investigations. The assessment will consist of the following sections:

- Ecological characterization;
- Exposure and effects assessment;
- Identification of constituents of potential ecological concern (COPECs);
- Ecological risk characterization;
- Assessment of uncertainties and limitations; and
- Summary.

4. Quality Assurance /Quality Control (QA/QC)

4.1. Analytical Methods

All samples collected during the BCP Remedial Investigation will be analyzed using EPA-approved analytical methods that follow the most recent edition of the EPA's "Test Methods for Evaluating Solid Waste" (SW-846), Methods for Chemical Analysis of Water and Wastes" (EPA 600/4-79-020), and Standard Methods for Examination of Water and Wastewater" (prepared and published jointly by the American Public Health Association, American Waterworks Association and Water Pollution Control Federation).

4.2. Laboratory

The subcontracted laboratory will be certified by the New York State Department of Health to perform Contract Laboratory Program (CLP) analysis on all media to be sampled during this investigation. The laboratory will perform the sample analysis in accordance with the most recent NYSDEC Analytical Services Protocol (ASP).

4.3. Data Submittal

Analytical data will be submitted in complete ASP category B data packs. Procedures for chain of custody, laboratory instrumentation calibration, laboratory analyses, reporting of data, internal quality control, and corrective actions shall be followed as per SW-846 and as per the laboratory's Quality Assurance Plan. Where appropriate, trip blanks, field blanks, field duplicates, and matrix spike, matrix spike duplicate shall be performed at a rate of 5% and will be used to assess the quality of the data. The laboratory's in-house QA/QC limits will be utilized whenever they are more stringent than those suggested by the EPA methods.

4.4. Data Usability Summary Report

The data package will be sent to a qualified, independent, data validation specialist for evaluation of the accuracy and precision of the analytical results. A Data Usability Summary Report (DUSR) will be prepared to describe the compliance of the analyses with the analytical method protocols detailed in the NYSDEC Analytical Services Protocol (ASP). The DUSR will provide a determination of whether the data meets the project-specific criteria for data quality and data use. The validation effort will be completed in accordance with NYSDEC Division of Environmental Remediation DUSR guidelines.

5. Health and Safety

Field tasks will be performed using industry standard health and safety procedures. A site-specific Health and Safety Plan (HASP) has been prepared for use by the field team during all field activities. This plan details known and potential hazards of the Site and field tasks as well as air monitoring and emergency procedures. The HASP is presented in Appendix C.

5.1. Community Air Monitoring

Where intrusive work is performed outdoors during the RI, i.e. drilling soil borings, and excavating test pits, air monitoring will be performed to protect the downwind community. During outdoor drilling and/or excavation operations, the Malcolm Pirnie representative will continually monitor the breathing air in the vicinity of the immediate work area using a PID capable of measuring total volatile organic compounds in air at concentrations as low as 1 part per million (PPM). The air in the work zone also will be visually monitored for dust generation. If sustained VOC measurements above 5 PPM, or visible dust generation are observed, the intrusive work will be temporarily halted and a more rigorous monitoring of VOCs and dust using recordable meters will be implemented in accordance with the NYSDOH Generic Community Air Monitoring Plan (CAMP). A copy of the CAMP is provided with the Health and Safety Plan in Appendix C.

6. Project Organization

Malcolm Pirnie has established a project team for the Ashland Advanced Materials Site, whose collective qualifications and experience are strongly suited for successful completion of the project. The proposed responsibilities of the key staff are summarized below:

Kent McManus, PE, will be the Project Manager for the work. In this capacity Mr. McManus will be responsible for the successful completion of each task including coordination and supervision of engineers and scientists, and adherence to the work plan, schedule and budget.

Jim Richert, CPG, will be the Quality Leader, responsible for the development of the work plan, coordination of subcontractors, direction of the field program including maintaining quality assurance policies that pertain to all aspects of sampling, well drilling and development.

Adam Mazenauer will be the field geologist responsible for implementing the field effort. Responsibilities will include directing Malcolm Pirnie's drilling subcontractors, and ensuring the successful completion of all field activities.

Shi Ng will be the Quality Assurance Officer (QAO). Mr. Ng will assist the project manager in the development of the work plan, interface with the laboratory to make requests and resolve problems and interface with the data validator during development of Data Usability Summary Reports.

7. Reporting

Following receipt of the validated analytical results, Malcolm Pirnie will prepare a Remedial Investigation Report and a Remedial Action Work Plan (RAWP) with an attached Soil/Fill Management Plan (S/FMP). Preparation of the report will entail a summary of fieldwork performed to date; data collected, and will include data tables, soil boring and well construction logs, analytical results, photos, and maps. The report will also include Malcolm Pirnie's recommendations for further characterization of the Site, if necessary. If no additional characterization is required, as anticipated, the RI report will include a Qualitative Human Health Risk Assessment. If additional investigation is required, the Qualitative Human Health Risk Assessment will be completed following the receipt of validated results of the additional characterization.

The Remedial Action Work Plan will include an evaluation of remedial alternatives. Data obtained during previous investigations will be utilized along with the planned end use to identify, select, and evaluate remedial action alternatives for the Site. Potential Site constituents and migration pathways will be categorized as follows:

- Air (including indoor air) and airborne dust.
- Soil/Fill.
- Groundwater.
- Surface water and sediment.

Once the degree of contamination associated with these media and other Site characteristics are quantified, General Response Alternatives for Site remediation will be defined. The General Response Alternatives that are considered will include the "no action" measure as a baseline against which other remedial measures, if necessary, can be compared.

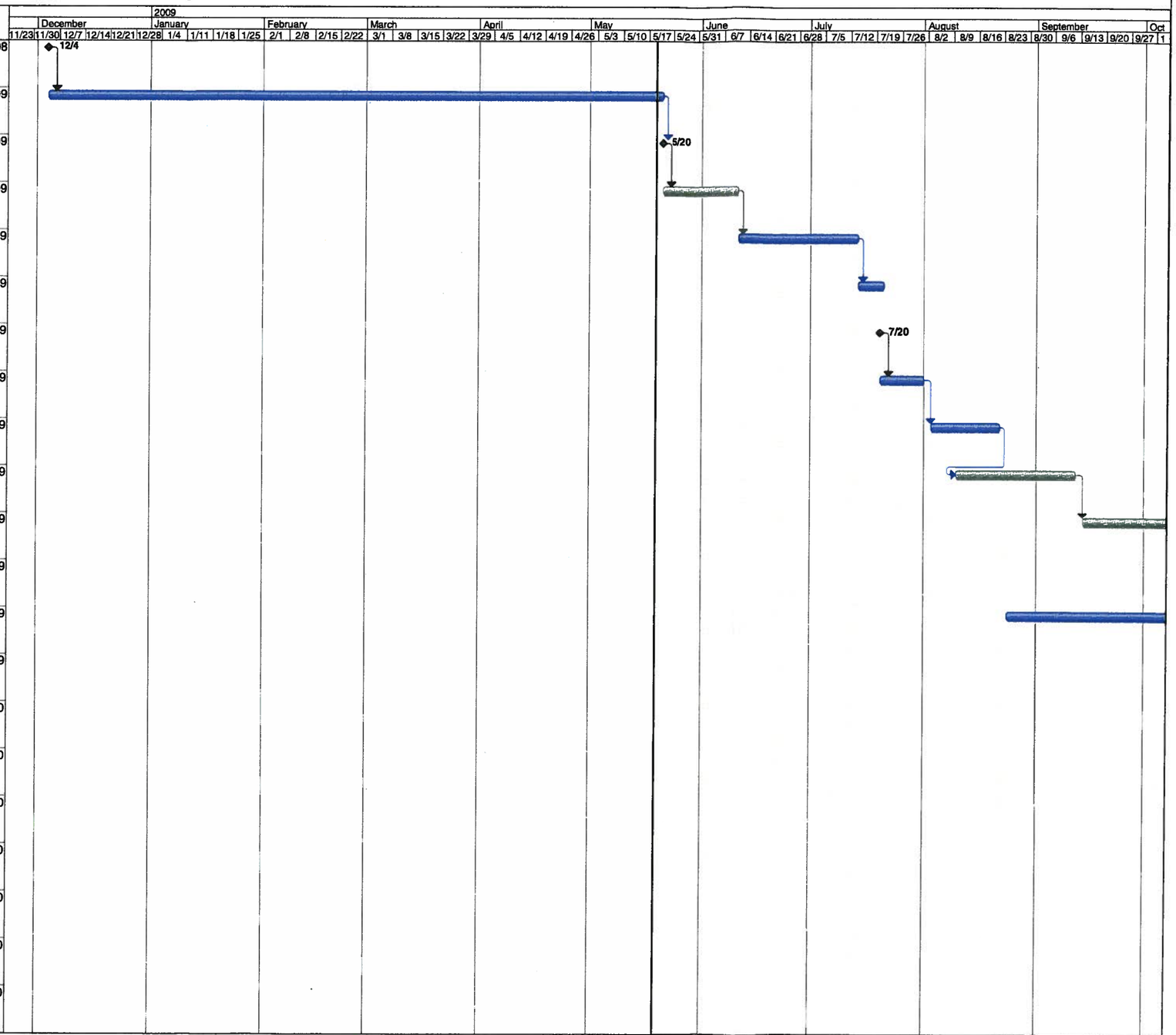
The RAWP will also include a Soil/Fill Management Plan, which will describe a plan for characterization and handling of excavated soil/fill based on NYSDEC Soil Cleanup Objectives as specified in 6 NYCRR Subpart 375-6 and/or negotiated site-specific action levels (SSALs).

8. Project Schedule

A schedule showing the planned remedial investigation activities and assessment of remedial alternatives is included in Figure 8-1.

Figure 8-1
Schedule of Brownfield Cleanup Program Activities
Ashland Advanced Materials BCP Site
Niagara Falls, New York

ID	Task Name	Duration	Start	Finish
1	Submittal of BCP application to NYSDEC	0 days	Thu 12/4/08	Thu 12/4/08
2	Preparation of Draft RI Work Plan (RIWP) / Citizens Part. Plan (CPP), HASP & Applicant Securing Project Funding	120 days	Thu 12/4/08	Wed 5/20/09
3	Submittal of Draft RI Work Plan (RIWP) / Citizens Part. Plan (CPP), HASP	0 days	Wed 5/20/09	Wed 5/20/09
4	NYSDEC Preliminary Review of Draft RIWP / CPP/HASP	15 days	Thu 5/21/09	Wed 6/10/09
5	Thirty Day Public Comment Period	23 days	Thu 6/11/09	Mon 7/13/09
6	Finalization and NYSDEC Approval of RIWP / CPP / HASP	5 days	Tue 7/14/09	Mon 7/20/09
7	Submit Final RIWP / CPP/ HASP	0 days	Mon 7/20/09	Mon 7/20/09
8	Mobilization for Field Investigation	10 days	Mon 7/20/09	Fri 7/31/09
9	RI Field Work	15 days	Mon 8/3/09	Fri 8/21/09
10	Chemical Analysis of RI Samples	25 days	Mon 8/10/09	Fri 9/11/09
11	Third Party Data Validation	30 days	Mon 9/14/09	Fri 10/23/09
12	Qualitative Human Health Risk Assessment	21 days	Mon 10/26/09	Mon 11/23/09
13	Prepare RI Report and Remedial Action Work Plan (RAWP)	70 days	Mon 8/24/09	Fri 11/27/09
14	Submit RI / RAWP reports to NYSDEC for review and public comment	0 days	Fri 11/27/09	Fri 11/27/09
15	Forty-five day comment period on RI report and Remedial Action Work Plan	35 days	Mon 11/30/09	Fri 1/15/10
16	NYSDEC Review of RI Report and RAWP	21 days	Mon 1/18/10	Mon 2/15/10
17	NYSDEC Approval of RI Report and RAWP	0 days	Mon 2/15/10	Mon 2/15/10
18	Site Construction/Remediation	60 days	Tue 2/16/10	Mon 5/10/10
19	Preparation of Final Engineering Report, Environmental Easement, OM&M Work Plan	30 days	Tue 5/11/10	Mon 6/21/10
20	NYSDEC review and approval of FER and issuance of Certificate of Completion	30 days	Tue 6/22/10	Mon 8/2/10
21	NYSDEC issuance of Certificate of Completion	0 days	Mon 8/2/10	Mon 8/2/10



Project: RI Schedule
Date: Tue 5/19/09
6407001

Task | Split | Progress | Milestone | Summary | Project Summary | External Tasks | External Milestone | Deadline

Figure 8-1
Schedule of Brownfield Cleanup Program Activities
Ashland Advanced Materials BCP Site
Niagara Falls, New York

ID	Task Name	Duration	Start	Finish
1	Submittal of BCP application to NYSDEC	0 days	Thu 12/4/08	Thu 12/4/08
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14	Submit RI / RAWP reports to NYSDEC for review and public comment	0 days	Fri 11/27/09	Fri 11/27/09
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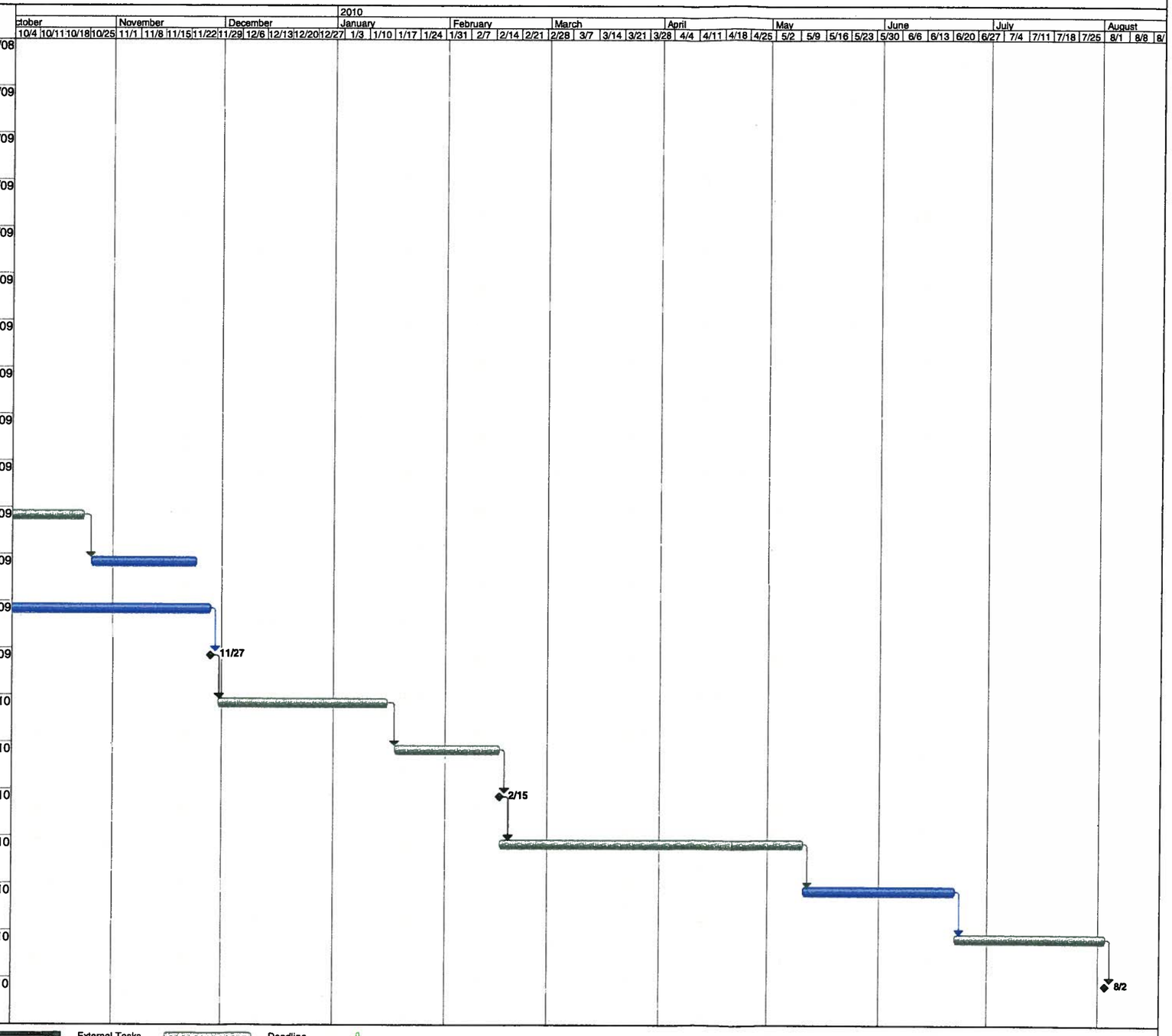
17	NYSDEC Approval of RI Report and RAWP	0 days	Mon 2/15/10	Mon 2/15/10
18	Site Construction/Remediation	60 days	Tue 2/16/10	Mon 5/10/10
19	Preparation of Final Engineering Report, Environmental Easement, OM&M Work Plan	30 days	Tue 5/11/10	Mon 6/21/10
20	NYSDEC review and approval of FER and issuance of Certificate of Completion	30 days	Tue 6/22/10	Mon 8/2/10
21	NYSDEC issuance of Certificate of Completion	0 days	Mon 8/2/10	Mon 8/2/10



Project: RI Schedule
Date: Tue 5/19/09
6407001

Task | Split | Progress | Milestone | Summary | Project Summary | External Tasks | External Milestone | Deadline

9. References

Conestoga Rovers & Associates (CRA), September 2002, Phase I Environmental Site Assessment, 6200 Niagara Falls Blvd., Buildings 100 to 106, Niagara Falls, New York.

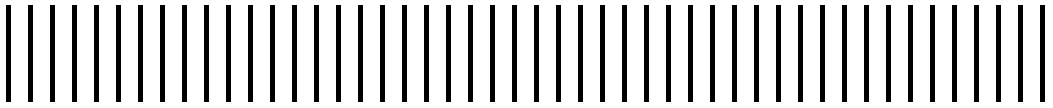
New York State Department of Health (NYSDOH), October 2006, Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York.

WSP Environment & Energy Inc., April 2008, Draft Phase II Investigation Report, Americarb, 6200 Niagara Falls Boulevard, Niagara Falls, New York.

Ashland Advanced Materials, LLC
Brownfield Cleanup Program - RI Work Plan

Appendix A

Phase I and Phase II Reports



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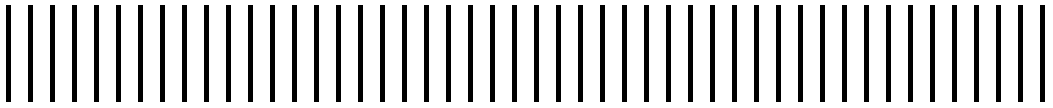
MALCOLM PIRNIE

Ashland Advanced Materials, LLC
Brownfield Cleanup Program - RI Work Plan

Appendix B

Citizen Participation Plan



6407-001 / BUF

MALCOLM PIRNIE

New York State Department of Environmental Conservation

Brownfield Cleanup Program

Site # C932146

Citizen Participation Plan
for the
6100 – 6200 Niagara Falls Boulevard Site

6100 and 6200 Niagara Falls Boulevard
City of Niagara Falls
Niagara County, New York

May 2009

Contents

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Note: The information presented in this Citizen Participation Plan was current as of the date of its approval by the New York State Department of Environmental Conservation. Portions of this Citizen Participation Plan may be revised during the Brownfield site's remedial process.

Applicant: **Ashland Advanced Materials LLC**
Site Name: **Ashland Advanced Materials BCP Site**
Site Address: **6100 and 6200 Niagara Falls Boulevard, Niagara Falls New York**
Site County: **Niagara County**
Site Number: **C932146**

1. What is New York's Brownfield Cleanup Program?

New York's Brownfield Cleanup Program (BCP) is designed to encourage the private sector to investigate, remediate (clean up) and redevelop brownfields. A Brownfield is any real property where redevelopment or reuse may be complicated by the presence or potential presence of a contaminant. A Brownfield typically is a former industrial or commercial property where previous operations may have resulted in contaminant impacts to air, soil and groundwater media. A Brownfield can pose environmental, legal and financial burdens on a community. If the Brownfield is not addressed, it can reduce property values in the area and affect economic development of nearby properties.

The BCP is administered by the New York State Department of Environmental Conservation (NYSDEC) which oversees Applicants that conduct Brownfield site remedial activities.[1] An Applicant is a person whose request to participate in the BCP has been accepted by NYSDEC. The BCP contains investigation and remediation (cleanup) requirements, ensuring that cleanups protect public health and the environment. When NYSDEC certifies that these requirements have been met, the property can be reused or redeveloped for the intended use.

For more information about the BCP, go online at: **www.dec.ny.gov/chemical/8450.html .**

2. Citizen Participation Plan Overview

This Citizen Participation (CP) Plan provides members of the affected and interested public with information about how NYSDEC will inform and involve them during the investigation and remediation of the site identified above. The public information and involvement program will be carried out with assistance, as appropriate, from the Applicant.

Appendix A contains a map identifying the location of the site.

Project Contacts

[1] "Remedial activities", "remedial action", and "remediation" are defined as all activities or actions undertaken to eliminate, remove, treat, abate, control, manage, or monitor contaminants at or coming from a Brownfield site.

Appendix B identifies NYSDEC project contact(s) to whom the public should address questions or request information about the site's remedial program. The public's suggestions about this CP Plan and the CP program for the site are always welcome. Interested people are encouraged to share their ideas and suggestions with the project contacts at any time.

Document Repositories

The locations of the site's document repositories also are identified in **Appendix B**. The document repositories provide convenient access to important project documents for public review and comment.

Site Contact List

Appendix C contains the Brownfield site contact list. This list has been developed to keep the community informed about, and involved in, the site's investigation and remediation process. The brownfield site contact list will be used periodically to distribute fact sheets that provide updates about the status of the project. These will include notifications of upcoming remedial activities at the site (such as fieldwork), as well as availability of project documents and announcements about public comment periods.

The Brownfield site contact list includes, at a minimum:

- chief executive officer and official(s) principally involved with relevant zoning and planning matters of each county, city, town and village in which the site is located;
- residents, owners, and occupants of the site and properties adjacent to the site;
- the public water supplier which services the area in which the site is located;
- any person who has requested to be placed on the site contact list;
- the administrator of any school or day care facility located on or near the site for purposes of posting and/or dissemination of information at the facility;
- document repositories.

Where the site or adjacent real property contains multiple dwelling units, the Applicant will work with NYSDEC to develop an alternative method for providing such notice in lieu of mailing to each individual. For example, the owner of such a property that contains multiple dwellings may be requested to prominently display fact sheets and notices required to be developed during the site's remedial process. This procedure would substitute for the mailing of such notices and fact sheets, especially at locations where renters, tenants and other residents may number in the hundreds or thousands, making the mailing of such notices impractical.

The Brownfield site contact list will be reviewed periodically and updated as appropriate. Individuals and organizations will be added to the site contact list upon request. Such requests should be submitted to the NYSDEC project contact(s) identified in **Appendix B**. Other additions to the Brownfield site contact list may be made on a site-specific basis at the discretion of the NYSDEC project manager, in consultation with other NYSDEC staff as appropriate.

CP Activities

Appendix D identifies the CP activities, at a minimum, that have been and will be conducted during the site's remedial program. The flowchart in **Appendix E** shows how these CP activities integrate with the site remedial process. The public is informed about these CP activities through fact sheets and notices developed at significant points in the sites remedial process.

- **Notices and fact sheets** help the interested and affected public to understand contamination issues related to a Brownfield site, and the nature and progress of efforts to investigate and remediate a Brownfield site.

- **Public forums, comment periods and contact with project managers** provide opportunities for the public to contribute information, opinions and perspectives that have potential to influence decisions about a Brownfield site's investigation and remediation.

The public is encouraged to contact project staff at any time during the site's remedial process with questions, comments, or requests for information about the remedial program.

This CP Plan may be revised due to changes in major issues of public concern identified in Section 6 or in the nature and scope of remedial activities. Modifications may include additions to the Brownfield site contact list and changes in planned citizen participation activities.

3. Site Information

Site Description

The proposed BCP Site is an approximately 15-acre Site located at 6100 and 6200 Niagara Falls Boulevard, in Niagara Falls, New York. The Site location is illustrated on Figure 1-1. The Site is the location of a former graphite manufacturing facility and is comprised of two adjacent property parcels with addresses of 6100 and 6200 Niagara Falls Blvd., in the City of Niagara Falls.

Once the BCP application is approved, the volunteer will enter into a BCP agreement with the NYSDEC. The volunteer plans to redevelop the Site for production of advanced carbon and graphite engineered materials and services that are essential to green technologies associated with solar energy, fuel cell generators, photovoltaic solar cells, and battery markets. Malcolm Pirnie, Inc. (Malcolm Pirnie) has prepared this Remedial Investigation Work Plan (RIWP) for investigation of the Site in accordance with the NYSDEC BCP requirements.

Site History

The site was owned by Niagara Falls Power Company until 1939. In the late 1950's Great Lakes Carbon Corporation began operations consisting of the production of graphite. Portions of the site were used as a research and development facility for the production of different types and shapes of graphite. Horsehead Industries purchased the property and operations in 1988. In

1992 the site and operations were sold to Sigri Corporation. Sigri Corporation changed its name to SGL Carbon in 1995. The Site (and buildings) are currently vacant. The last occupant, Sigri Carbon, vacated the property in 2002. Manufacturing operations have not been conducted since 1998.

Environmental History

To date there have been two environmental investigations at the Site, a Phase I in 2002 and a Phase II Investigation in 2008.

Phase I ESA

The Phase I Environmental Site Assessment (ESA) was completed by Conestoga Rovers & Associates (CRA) of New York in September 2002. However, the Phase I was performed on the eastern 6.2 acre parcel only. The findings of the Phase I ESA are listed below:

- The Site was included in several State and Federal environmental databases.
- Historic aerial photos contain evidence of industrial Building s on site, a landfill adjacent to the northern site boundary, a gas station to the south of the Site.
- Documentation of an on-site release of extrusion oil in 1981.
- The Site inspection resulted in documentation of conditions and contents of site Building s, fill material resent on the northern portion of the Site including; construction debris, wood, graphite, carbon, coke, and sand. Black fine grained carbon, graphite, sand, and coke were observed on the ground surface throughout the Site.
- Interviews with Site personnel revealed:
  - A former 10,000 gallon fuel oil UST, with no closure documentation found.
  - Primary chemicals and raw materials used on Site included petroleum coke, extrusion oil, petroleum oils and greases, mineral oils, binder coal tar pitch, QA/QC lab chemicals, graphite, petroleum pitch, wood chips, ethylene glycol, silica sand, and general building maintenance supplies.
  - Two 55- gallon drums of unidentified liquid stored in the western portion of Building 103.
  - The site was considered a major source of air emissions and operated under a NYSDEC Title V permit which expired on April 5, 2005.

- Following a PCB assessment at the site, all PCB containing equipment was reportedly either removed from the site or the PCB oil removed and replaced with non-PCB containing fluids.
- In 1991 a press located in the northern portion of Building 103 caused the release of hydraulic oil to a concrete sump.
- Petroleum oil stains were observed on the concrete floor near the extrusion press.

- The Phase I identified the following Recognized Environmental Conditions (RECs):
  - Historic Site operations – Heavy manufacturing of extruded carbon products since 1939.
  - On-site fill material.
  - Documented spills and releases.
  - Pits, sumps, trenches.
  - Adjacent land use of active solid waste landfill, closed hazardous waste landfill.

A copy of the Phase I is provided in Appendix A.

Phase II Site Investigation

Based on the findings of the Phase I ESA, a Phase II site investigation was completed by WSP Environment & Energy in June, 2007. Fill material consisting of sand, gravel, construction debris (concrete, wood, glass, and asphalt), silty sand, and silty clay was encountered in the borings at thicknesses up to 8 feet. Beneath the fill was native soil consisting of dense clay. Groundwater was encountered at four feet bgs at four of the borings; six feet bgs in the north western portion of the site in the former landfill area and eleven feet bgs in the southeastern portion of the site, east of Building No. 2.

- Findings of the Phase II include:
  - Fill material up to eight feet thick containing sand, gravel, concrete, glass, asphalt, and wood.
  - Piles of landfill material up to ten feet high containing carbon, graphite, ash, and construction or demolition (C&D) debris.
  - Concentrations of several organic compounds and metals exceeded soil cleanup objectives (SCOs) for restricted industrial use, including several PAHs, some up to two orders of magnitude above the SCOs, in three of the four soil samples.
  - Groundwater contained chrysene at concentrations up to four orders of magnitude above the Class GA groundwater standard and several metals above these standards.
  - Soil vapor beneath three sampled buildings (Buildings No.2, 3, and 4) contained organic compounds at concentrations requiring additional sampling. At one of these

buildings (Building No. 2) the concentrations of 1,1,1-TCA and TCE were at levels at which mitigation is recommended by the NYSDOH. VOCs were also present in indoor air in one of these buildings at concentrations warranting further investigation and possibly mitigation.

4. Remedial Process

Note: See **Appendix E** for a flowchart of the Brownfield site remedial process.

Application

The Applicant has applied for and been accepted into New York's Brownfield Cleanup Program as a Volunteer. This means that the Applicant was not responsible for the disposal or discharge of the contaminants or whose ownership or operation of the site took place after the discharge or disposal of contaminants. The Volunteer must fully characterize the nature and extent of contamination onsite, and must conduct a "qualitative exposure assessment," a process that characterizes the actual or potential exposure of people, fish and wildlife to contaminants identified on the site and to contamination that have migrated from the site.

The Applicant in its Application proposes that the site will be used for restricted commercial purposes.

To achieve this goal, the Applicant will conduct remedial activities at the site with oversight provided by NYSDEC. The Brownfield Cleanup Agreement executed by NYSDEC and the Applicant sets forth the responsibilities of each party in conducting a remedial program at the site.

Investigation

The remedial investigation (RI) of the site will be performed with NYSDEC oversight. The Applicant has developed a remedial investigation workplan, which is subject to public comment as noted in **Appendix D**. The goals of the investigation are as follows:

1) Define the nature and extent of contamination in soil, groundwater, and soil gas;

2) Identify the source(s) of the contamination;

3) Assess the impact of the contamination on public health and/or the environment; and

4) Provide information to support the development of a Remedial Work Plan to address the contamination, or to support a conclusion that the contamination does not need to be addressed.

The Applicant will prepare an RI Report after it completes the RI. This report will summarize the results of the RI and will include the Applicant's recommendation of whether remediation is needed to address site-related contamination. The RI Report is subject to review and approval by

NYSDEC. Before the RI Report is approved, a fact sheet that describes the RI Report will be sent to the site's contact list.

NYSDEC will determine if the site poses a significant threat to public health and/or the environment. If NYSDEC determines that the site is a "significant threat," a qualifying community group may apply for a Technical Assistance Grant (TAG). The purpose of a TAG is to provide funds to the qualifying community group to obtain independent technical assistance. This assistance helps the TAG recipient to interpret and understand existing environmental information about the nature and extent of contamination related to the site and the development/implementation of a remedy.

An eligible community group must certify that its membership represents the interests of the community affected by the site, and that its members' health, economic well-being or enjoyment of the environment may be affected by a release or threatened release of contamination at the eligible site.

For more information about the TAG Program and the availability of TAGs, go online at: **www.dec.ny.gov/regulations/2590.html.**

Remedy Selection

After NYSDEC approves the RI Report, the Applicant will be able to develop a Remedial Work Plan if remediation is required. The Remedial Work Plan describes how the Applicant would address the contamination related to the site.
The public will have the opportunity to review and comment on the draft Remedial Work Plan. The site contact list will be sent a fact sheet that describes the draft Remedial Work Plan and announces a 45-day public comment period. NYSDEC will factor this input into its decision to approve, reject or modify the draft Remedial Work Plan.

A public meeting may be held by NYSDEC about the proposed Remedial Work Plan if requested by the affected community and if significant substantive issues are raised about the draft Remedial Work Plan. Please note that, in order to request a public meeting, the health, economic well-being or enjoyment of the environment of those requesting the public meeting must be threatened or potentially threatened by the site. In addition, the request for the public meeting should be made within the first 30 days of the 45-day public comment period for the draft Remedial Work Plan. A public meeting also may be held at the discretion of the NYSDEC project manager in consultation with other NYSDEC staff as appropriate.

Construction

Approval of the Remedial Work Plan by NYSDEC will allow the Applicant to design and construct the alternative selected to remediate the site. The site contact list will receive notification before the start of site remediation. When the Applicant completes remedial

activities, it will prepare a final engineering report that certifies that remediation requirements have been achieved or will be achieved within a specific time frame. NYSDEC will review the report to be certain that the remediation is protective of public health and the environment for the intended use of the site. The site contact list will receive a fact sheet that announces the completion of remedial activities and the review of the final engineering report.

Certificate of Completion and Site Management

Once NYSDEC approves the final engineering report, it will issue the Applicant a Certificate of Completion. This Certificate states that remediation goals have been achieved, and relieves the Applicant from future remedial liability, subject to statutory conditions. The Certificate also includes a description of any institutional and engineering controls or monitoring required by the approved remedial work plan. If the Applicant uses institutional controls or engineering controls to achieve remedial objectives, the site contact list will receive a fact sheet that discusses such controls.

An institutional control is a non-physical restriction on use of the Brownfield site, such as a deed restriction that would prevent or restrict certain uses of the remediated property. An institutional control may be used when the remedial action leaves some contamination that makes the site suitable for some, but not all uses.

An engineering control is a physical barrier or method to manage contamination, such as a cap or vapor barrier.

Site management will be conducted by the Applicant as required. NYSDEC will provide appropriate oversight. Site management involves the institutional and engineering controls required for the Brownfield site. Examples include: operation of a water treatment plant, maintenance of a cap or cover, and monitoring of groundwater quality.

5. Citizen Participation Activities

CP activities that have already occurred and are planned during the investigation and remediation of the site under the BCP are identified in **Appendix D: Identification of Citizen Participation Activities**. These activities also are identified in the **flowchart of the BCP process in Appendix E**. NYSDEC will ensure that these CP activities are conducted, with appropriate assistance from the Applicant.

All CP activities are conducted to provide the public with significant information about site findings and planned remedial activities, and some activities announce comment periods and request public input about important draft documents such as the Remedial Work Plan.

All written materials developed for the public will be reviewed and approved by NYSDEC for clarity and accuracy before they are distributed. Notices and fact sheets can be combined at the discretion, and with the approval of, NYSDEC.

6. Major Issues of Public Concern

This section of the CP Plan identifies major issues of public concern, if any, that relate to the site. Additional major issues of public concern may be identified during the site's remedial process.

Redevelopment of the site may be made financially possible because of the beneficial land conveyance principals under New York State Urban Renewal Law, tax benefits made available to the applicant under the New York State Empire Zone program and the New York State Brownfield Cleanup Program, and by the environmental liability protection afforded to the applicant under the New York State Brownfield Cleanup Program.
The Site will encompass an area of approximately 15 acres for planed redevelopment that will include the reuse of the manufacturing and office space. Remediation of the Site will benefit most stakeholders that include residents of the City of Niagara Falls and New York State. Redevelopment of the Site will return unused industrial property to the City tax base while providing for an economic benefit to the local and regional community.

Appendix A – Site Location Map

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ASHLAND ADVANCED MATERIALS
SITE LOCATION MAP
6200 NIAGARA FALLS BOULEVARD
NIAGARA FALLS, NEW YORK

FIGURE 1-1

Appendix B – Project Contacts and Document Repositories

Project Contacts

For information about the site's remedial program, the public may contact any of the following project staff:

New York State Department of Environmental Conservation (NYSDEC):

Jeff Konsella, P.E., Project Manager
NYSDEC Region 9
Division of Environmental Remediation
270 Michigan Avenue
Buffalo, NY 14203-2999
(716) 851-7220
Email address: jakonsel@gw.dec.state.ny.us

Mark Baetzhold
Citizen Participation Specialist
NYSDEC Region 9
270 Michigan Avenue
Buffalo, NY 14203-2999
(716) 851-7220

New York State Department of Health (NYSDOH):

Matt Forcucci
Public Health Specialist III
NYSDOH
584 Delaware Ave.
Buffalo, NY 14202
(716) 847-4385
Email address: mjf13@health.state.ny.us

Document Repositories

The document repositories identified below have been established to provide the public with convenient access to important project documents:

Niagara Falls Public Library
Lasalle Branch
8728 Buffalo Avenue
Niagara Falls, New York 14304
Phone: (716) 823-1854
Hours: Mon, Tue, wed 10:00 AM – 8:00 PM
Thu, Fri, Sat 10:00 AM- 5:00 PM
Sun: Closed

NYSDEC Region 9
270 Michigan Avenue
Buffalo, NY 14203-2999
Attn: Jeff Konsella , Project Manager
Phone: (716) 851-7220
Hours: M-F, 8:30 a.m.- 4:45 p.m.
(call for appointment)

Appendix C – Brownfield Site Contact List

Public Agencies Officials

Mr. Gregory Sutton
NYSDEC Region 9
270 Michigan Avenue
Buffalo, NY 14203

Mr. Jeff Konsella
NYSDEC Region 9
270 Michigan Avenue
Buffalo, NY 14203

Mr. Mark Baetzhold
NYSDEC Region 9
270 Michigan Avenue
Buffalo, NY 14203

Elected Federal/State Officials

Senator Kirstin Hillibrand
United States Senate
726 Exchange St., Ste. 511
Buffalo, NY 14210

Senator Charles Schumer
United States Senate
130 S. Elmwood Avenue, #660
Buffalo, NY 14202

Representative Louise Slaughter
U.S. House of Representatives
465 Main Street, Ste. 105
Buffalo, NY 14203

Senator Antoine Thompson
60th District, N.Y.S. Senate
65 Court Street Rm 213
Buffalo, NY 14202

Assemblywoman Francine DelMonte
138th Assembly District
1700 Pine Avenue
Niagara Falls, NY 14301

County

Mr. Greg Lewis
Niagara County Manager
59 Park Avenue
Lockport, NY 14094

Chairman William Ross
Niagara County Legislature
6761 Walmore Road
Niagara Falls, NY 14304

Mr. Dennis Virtuoso
Niagara County Legislature
2703 Independence Ave
Niagara Falls NY, 14301

Mr. Wayne Jagow, County Clerk
Niagara County Court House
175 Hawley Street
Lockport, NY 14094
Ms. Mary Jo Tamburlin

Niagara County Legislative Clerk
175 Hawley Street - 1st Floor
Lockport, NY 14094

Mr. Samuel Ferraro, Director
Niagara County IDA
6311 Inducon Corporate Drive
Sanborn, NY 14132

Mr. James Volkosh, Director
Niagara County Emergency Services
5574 Niagara St. Ext
Lockport, NY 14095

Mr. Daniel Stapleton, Director
Niagara Cnty. Dept. of Public Health
5467 Upper Mountain Rd, Ste. 100
Lockport, NY 14094-1894

Mr. James E. Devald, P.E.
Director of Environmental Health
5467 Upper Mountain Road, Ste. 100
Lockport, NY 14094

Mr. Herbert Downs, Director
Niagara County Water District
7227 Williams Road
Niagara Falls, NY 14304

Ms. Dawn Walczak
Niagara County EMC
59 Park Avenue
Lockport, NY 14094

Ms. Amy Fisk
Niagara Co. Economic Planning Dept.
6311 Inducon Corp. Dr.
Sanborn, NY 14132

City

Mayor Paul Dyster
City Hall
745 Main Street
Niagara Falls, NY 14301

Councilman Samuel Fruscione, Chair
City Hall Room 202
745 Main Street
Niagara Falls, NY 14301

Councilman Charles Walker
City Hall Room 202
745 Main Street
Niagara Falls, NY 14301

Councilman Robert Anderson
City Hall Room 202
745 Main Street
Niagara Falls, NY 14301

Councilman Steven Fournier
City Hall Room 202
745 Main Street
Niagara Falls, NY 14301

Councilman Chris Robins
City Hall Room 202
745 Main Street
Niagara Falls, NY 14301

Ms. Carol Antonucci, City Clerk
745 Main Street Room 114
Niagara Falls, NY 14301

Mr. Robert Antonucci
Niagara Falls Office of Planning
745 Main Street
Niagara Falls, NY 14301

Niagara Falls Office of Environmental Services
745 Main Street
Niagara Falls, NY 14301

Mr. Robert Buzzelli
Engineering Department
City Hall Room 303
745 Main Street
Niagara Falls, NY 14301

Mr. Gerry Grose, Executive Director
Niagara Falls Water Board
5815 Buffalo Avenue
Niagara Falls, NY 14304

Media

News Director
WGRZ TV Channel 2
259 Delaware Avenue
Buffalo, NY 14202

News Director
WIVB TV Channel 4
2077 Elmwood Avenue
Buffalo, NY 14207

News Director
WKBW TV Channel 7
7 Broadcast Plaza
Buffalo, NY 14202

ATTN: Michael Desmond
WNED, ENVIRONMENTAL NEWS DESK
PO 1263, Horizons Plaza
Buffalo, NY 14240

News Director
WBEN Radio News/Talk 930
500 Corporate Parkway #200
Buffalo, NY 14226-1263

Mark Scott, News Director
WBFO 88.7/WOLN 91.3
3435 Main Street
Buffalo, NY 14214-3001

Attn: Editor
The Niagara Gazette
310 Niagara Street
Niagara Falls, NY 14302

Environmental News Desk
Buffalo News
1 News Plaza
Buffalo, NY 14240

Others

Mr. James Metzger
League of Women Voters
70 Haverford Lane
Williamsville, NY 14221

Dr. Joseph Gardella
BEMC
178 Admiral Rd.
Buffalo, NY 14216

Citizen's Environmental Coalition
33 Central Avenue
Albany, NY 12210

Citizens Campaign for the Environment
227 McConkey Dr.
Tonawanda, NY 14223

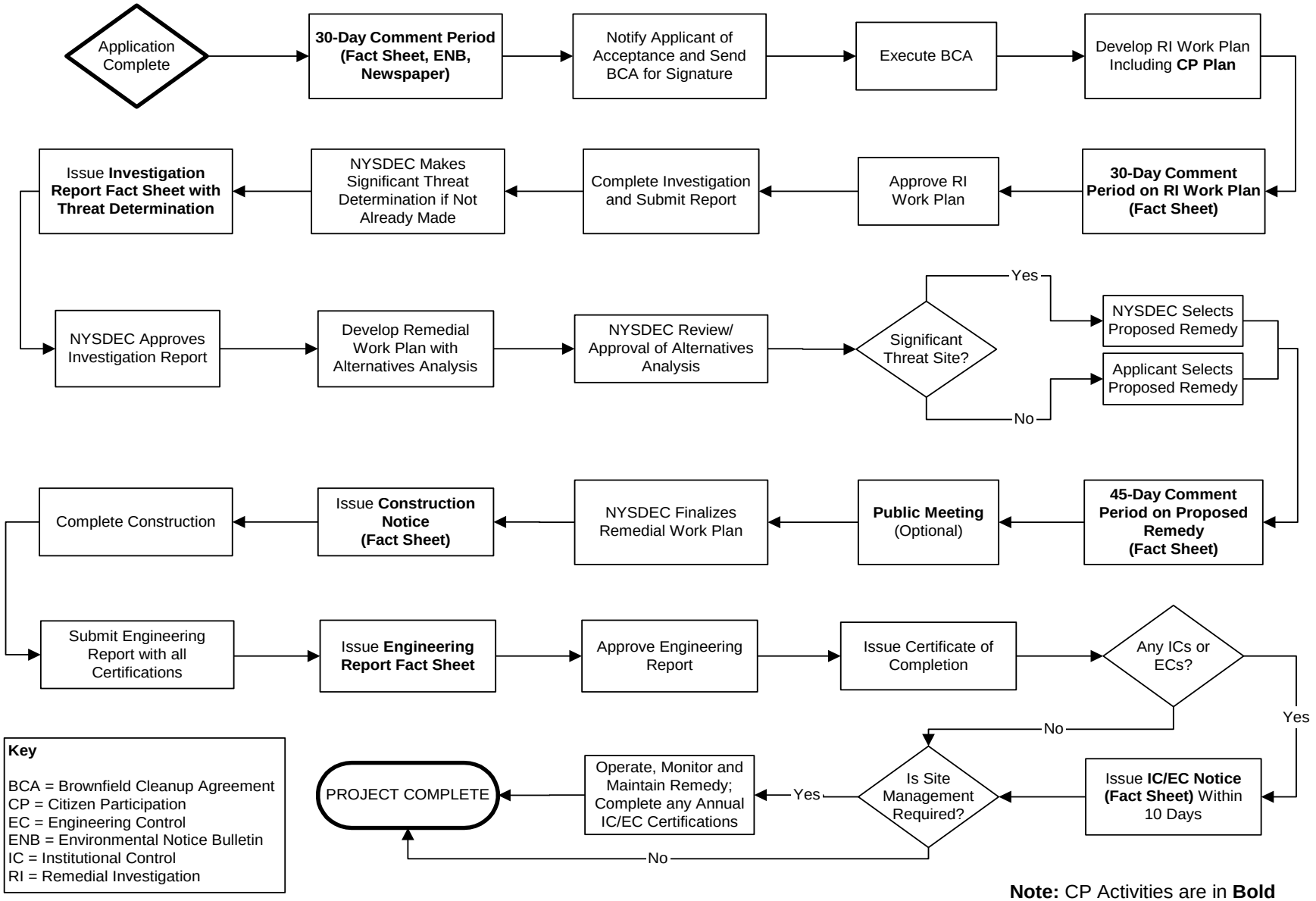
Dr Charles Lamb
Sierra Club - Niagara Region
335 Walnut Ln
Youngstown, NY 14174

Ms. Julie Barrett O'Neill
Buffalo Niagara Riverkeeper
1250 Niagara Street
Buffalo, NY 14213

Appendix D – Identification of Citizen Participation Activities

Required Citizen Participation (CP) Activities	CP Activities) Occur at this Point
Application Process:	
• Prepare brownfield site contact list (BSCL) • Establish document repositories	At time of preparation of application to participate in BCP.
• Publish notice in Environmental Notice Bulletin (ENB) announcing receipt of application and 30-day comment period	When NYSDEC determines that BCP application is complete. The 30-day comment period begins on date of publication of notice in ENB. End date of comment period is as stated in ENB notice. Therefore, ENB notice, newspaper notice and notice to the BSCL should be provided to the public at the same time.
After Execution of Brownfield Site Cleanup Agreement:	
• Prepare citizen participation (CP) plan	Draft CP Plan must be submitted within 20 days of entering Brownfield Site Cleanup Agreement. CP Plan must be approved by NYSDEC before distribution.
After Remedial Investigation (RI) Work Plan Received:	
• Mail fact sheet to BSCL about proposed RI activities and announcing 30-day public comment period on draft RI Work Plan	Before NYSDEC approves RI Work Plan. If RI Work Plan is submitted with application, comment periods will be combined and public notice will include fact sheet. 30-day comment period begins/ends as per dates identified in fact sheet.
After RI Completion:	
• Mail fact sheet to BSCL describing results of RI	Before NYSDEC approves RI Report.
After Remedial Work Plan (RWP) Received:	
• Mail fact sheet to BSCL about proposed RWP and announcing 45-day comment period • Public meeting by NYSDEC about proposed RWP (if requested by affected community or at discretion of NYSDEC project manager in consultation with other NYSDEC staff as appropriate)	Before NYSDEC approves RWP. 45-day comment period begins/ends as per dates identified in fact sheet. Public meeting would be held within the 45-day comment period.
After Approval of RWP:	
• Mail fact sheet to BSCL summarizing upcoming remedial construction	Before the start of remedial construction.
After Remedial Action Completed:	
• Mail fact sheet to BSCL announcing that remedial construction has been completed • Mail fact sheet to BSCL announcing issuance of Certificate of Completion (COC)	At the time NYSDEC approves Final Engineering Report. These two fact sheets should be combined when possible if there is not a delay in issuance of the COC.

Appendix E – Brownfield Cleanup Program Process

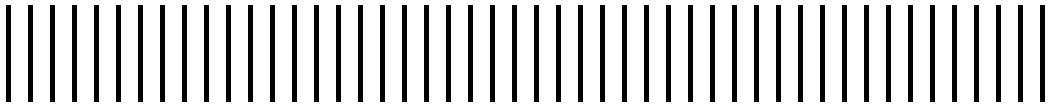


Note: CP Activities are in **Bold**

Ashland Advanced Materials, LLC
Brownfield Cleanup Program - RI Work Plan

Appendix C

Health and Safety Plan



6407-001 / BUF

MALCOLM PIRNIE

SITE SPECIFIC HEALTH AND SAFETY PLAN

MALCOLM PIRNIE

SECTION 1: GENERAL INFORMATION AND DISCLAIMER		PROJECT NUMBER:	6105-002
PROJECT NAME:	6100-6200 Niagara Falls Blvd. Site	CLIENT NAME:	Ashland Advanced Materials
PROJECT MANAGER:	Kent McManus	PROJECT LEADER:	Jim Richert
PREPARED BY:	Jim Richert	DATE:	12/10/08

NOTE: This site specific Health and Safety Plan - Short Form (HASP-SF) has been prepared for use by **Malcolm Pirnie, Inc.** employees for work at this site / facility. **The plan is written for the specific site / facility conditions, purposes, tasks, dates and personnel specified, and must be amended and reviewed by those personnel named in Section 4 if these conditions change.** Malcolm Pirnie, Inc. is not responsible for its use by others.

Subcontractors shall be solely responsible for the health and safety of their employees and shall comply with all applicable laws and regulations. In accordance with 1910.120(b)(1)(iv) and (v), Malcolm Pirnie, Inc. will inform subcontractors of the site / facility emergency response procedures, and any potential fire, explosion, health, safety or other hazards by making this Site Specific Health and Safety Plan and site information obtained by others available during regular business hours. All contractors and subcontractors are responsible for: (1) developing their own Health and Safety Plan, including a written Hazard Communication Program and any other written hazard specific or safety programs required by federal, state and local laws and regulations, that details subcontractor tasks, potential or actual hazards identified as a result of a risk analysis of those tasks, and the engineering controls, work practices and personal protective equipment to be utilized to minimize or eliminate employee exposure to the hazard; (2) providing their own personal protective equipment; (3) providing documentation that their employees have been health and safety trained in accordance with applicable federal, state and local laws and regulations; (4) providing evidence of medical surveillance and medical approvals for their employees; and (5) designating their own site safety officer responsible for ensuring that their employees comply with their own Health and Safety plan and taking any other additional measures required by their site activities.

Providing a copy of this Malcolm Pirnie plan to subcontractors, does not establish, nor is it intended to establish a "joint employer" relationship between the Contractor and Malcolm Pirnie. This allowance does not establish, nor is it intended to establish, a direct or indirect employer/employee relationship with subcontractor's employees.

THIS SITE SPECIFIC HASP MUST BE REVIEWED AND APPROVED BY CORPORATE HEALTH AND SAFETY FOR ONE OR MORE OF THE FOLLOWING CONDITIONS: IF AN UPGRADE TO "LEVEL C" OR ABOVE IS ANTICIPATED; A PERMIT REQUIRED CONFINED SPACE ENTRY OR ENTRY INTO AN EXCAVATION IS ANTICIPATED; SAMPLING OF UNKNOWN DRUMS AND/OR IN UNKNOWN CONDITIONS IS ANTICIPATED, OR IF THERE MAY BE RADIATION LEVELS GREATER THAN 0.5 mR (500µR)/HOUR.

SECTION 2: EMERGENCY INFORMATION

(A) LOCAL RESOURCES	SERVICE NAME	TELEPHONE NUMBER
EMERGENCY MEDICAL SERVICES	Rural- Metro Ambulance	911 or (716) 882 - 8400
HOSPITAL (Map attached)	St. Mary's Hospital	(716) 298 - 2325
FIRE DEPARTMENT	Niagara Falls Fire Dept	911
POLICE / SECURITY	Niagara Falls Police Department	911
HAZMAT/ SPILL / OTHER RESPONSE	Buffalo Fire Co	911

(B) CORPORATE RESOURCES

MALCOLM PIRNIE 24 / 7 EMERGENCY / INCIDENT TELEPHONE NUMBERS		(800) 478-6870 (24 HOURS)
CORPORATE HEALTH AND SAFETY **	Chuck Myers	(914) 641-2610 WHI
FIER PROJECTS	Chuck Myers	(914) 641-2610 WHI
MUNI/WEG/CMRT PROJECTS	LAURA LEE-CASEY,	(914) 641-2707 WHI
CORPORATE HEALTH PHYSICIST	LES SKOSKI	(201) 398-4377 NNJ
WORKERS COMP / OSHA LOG	Chuck Myers	(914) 641-2707 WHI
LEGAL DEPARTMENT **	JERRY CAVALUZZI	(914) 641-2950 WHI

**** TO BE NOTIFIED IN CASE OF ACCIDENT**

SECTION 3: PROJECT INFORMATION

(A) SITE / FACILITY INFORMATION:

SITE NAME: Ashland Advanced Materials BCP Site

ADDRESS: 6100- 6200 Niagara Falls Blvd., Niagara Falls, NY

TOWNSHIP/ COUNTY: /County of Niagara

☐ FEDERAL ☐ STATE ☐ MUNICIPAL / REGIONAL ☒ PRIVATE

SITE CLIENT CONTACT: Jeff Forgach – General Manager

PHONE NUMBER: 716-283-6853

SITE SAFETY CONTACT: Chuck Myers (WHI)

914/641-2610

(B) SITE CLASSIFICATION: (check all that apply)

☐ HAZARDOUS (RCRA)	☐ UST / LUST	☐ REFINERY
☐ HAZARDOUS (CERCLA / STATE)	☒ BROWNFIELD	☐ WTP / WWTP
☐ CONSTRUCTION	☐ CHEMICAL PLANT	☐ OTHER:
☐ LANDFILL (NON-HAZARDOUS)	☐ MANUFACTURING	
☐ ACTIVE	☒ INACTIVE	

(C) TYPE OF FIELD ACTIVITY

☒ HAZARDOUS WASTE	☐ SOLID WASTE	☐ CONSTRUCTION
☒ HYDROGEOLOGY	☐ ENVIRONMENTAL	☒ AIR / ODOR
☐ WASTE WATER	☐ WATER	☐ OTHER:

(D) FIELD OBJECTIVES (Check all that apply)

		SAMPLING:	
☐ PRE-JOB VISIT	☐ AUDIT	☒ AIR	☒ SEDIMENT
☒ CONTRACTOR OVERSIGHT	☐ OTHER:	☒ SURFACE WATER	☒ SURFACE SOIL
☐ CONSTRUCTION MGMT		☒ GROUND WATER	☐ LANDFILL
☐ INSPECTION		☐ WASTE WATER	☒ OTHER
☒ INVESTIGATION SURVEY		☐ WASTE STREAM	Subsurface Soil

DATE(S) OF FIELD ACTIVITIES: Spring of 2009

(E) FIELD TASKS

MALCOLM PIRNIE TASKS

M1. Geoprobe soil boring, soil/fill sampling, well installation and development

M2. Test Pit and waste pile excavation with backhoe

M3. Environmental Sampling (Subsurface soil/fill, groundwater, SW, SED, soil gas, indoor air)

M4. Environmental Profile of building interior and contents prior to sampling of indoor air

TASKS PERFORMED BY OTHERS

01. GeoProbe Drilling/installation of temporary wells

02. Test pit and waste pile Excavation

03. Site Survey

04.

SECTION 4: PROJECT SAFETY ORGANIZATION, HEALTH AND SAFETY TRAINING, AND MEDICAL MONITORING

(A) PROJECT HEALTH AND SAFETY ROLES, RESPONSIBILITIES AND COORDINATION

PROJECT OFFICER	The Project Officer (PO) is ultimately responsible for project performance. The PO seeks and gets appropriate approvals for risk management decisions (e.g. from Regional/Practice Director(s), Legal Council, Corporate Health and Safety), and selects and effective and qualified project team. The PO supports the Project Manager or Deputy Project Manager with appropriate resources.
PROJECT MANAGER DEPUTY PROJECT MANAGER	The Project Manager (PM) has the responsibility for executing the project in accordance with the scope of work and good engineering practice. The PM will supervise the allocation of resources and staff to implement specific aspects of this HASP and may delegate authority to expedite and facilitate any application of the program. The PM implements and executes an effective program of site-specific personnel protection and accident prevention. The Project Manager reports to the Project Officer. Deputy Project Managers (DPM) are assigned all duties and responsibilities of the Site Safety Officer in his/her absence.
CORPORATE HEALTH & SAFETY	Corporate Health and Safety is responsible for Malcolm Pirnie's overall Health and Safety Program and provides project guidance on air monitoring methodology, data interpretation and assistance in determining appropriate project engineering controls, work practices, and personal protective equipment. Corporate Health and Safety also reviews and approve HASPs in accordance with Section 1.
SITE SAFETY OFFICER ALTERNATE SITE SAFETY OFFICER (S)	The Site Safety Officer (SSO) is responsible for interpreting and implementing the site health and safety provisions set out in this HASP, and will guide the efforts of field team personnel in their day-to-day compliance with this HASP. The SSO has the ability and authority to make necessary changes or additions to this HASP and provide technical assistance to field team personnel on problems relating to worksite safety. The SSO has the authority to correct safety-related deficiencies in materials or practice and to call a Project STOP in the most serious cases. Alternate Site Safety Officer (ASSO) is assigned all duties and responsibilities of the Site Safety Officer in his/her absence.
PUBLIC INFORMATION OFFICER:	The Public Information Officer (PIO) is responsible for all public, press and other news media request for information, and is the only person authorized to provide such information
SITE RECORDKEEPER:	The Site Recordkeeper is responsible for the documentation of all related heath and safety data documentation, including but not limited to metrological data, instrument calibration, accident and injury reports, and air monitoring data.
FIELD TEAM LEADER:	The Field Team Leader (FTL) is responsible for leading "on-site" activities of field team personnel, and to ensure field team personnel perform only those tasks that have been identified in this HASP.
FIELD TEAM PERSONNEL	Field personnel have the following health and safety responsibilities: • Implement the procedures set forth in the HASP; • Take all reasonable precautions to prevent injury to themselves and their fellow employees; and • Perform only those tasks that they believe they can do safely, and immediately report any accidents and/or unsafe conditions in accordance with Section 1.

(B) PROJECT TEAM - The following Malcolm Pirnie personnel are designated to carry out the stated project job functions on site. THE SITE SAFETY OFFICER, OR A DESIGNATED ALTERNATE WILL BE ON-SITE DURING **ALL** SITE ACTIVITIES. (NOTE: One person may carry out more than one job function.)

PROJECT MANAGER: Kent McManus

PROJECT OFFICER: Kent McManus

DEPUTY PROJECT MANAGER: Jim Richert

ALTERNATE SAFETY OFFICER(S): Adam Mazenauer

QUALITY ASSURANCE OFFICER:

QUALITY REVIEWER:

SITE RECORDKEEPER: Adam Mazenauer

FIELD TEAM LEADER: Jim Richert

FIELD TEAM PERSONNEL: Adam Mazenauer

PUBLIC INFORMATION OFFICER:

The following subcontractors and governmental agencies have been informed by Malcolm Pirnie of emergency response procedures, and any potential fire, explosion, health, safety or other hazards of the site / facility by making this Site Specific Health and Safety Plan and site information obtained by others available during regular business hours. Subcontractors and governmental agencies shall be solely responsible for the health and safety of their employees and shall comply with all applicable laws and regulations as described in **Section 1** of this plan.

SUBCONTRACTOR(S): Geoprobe driller/ excavator/surveyor

FEDERAL AND STATE AGENCY REPS: DEC = Jeff Consella

OTHER AGENCY REPS:

(C) HEALTH AND SAFETY TRAINING, MEDICAL MONITORING, AND FIT TESTING PROGRAM

The following project staff is included in the Malcolm Pirnie Health and Safety Training and Medical Monitoring programs. The details of these programs can be found in the Health and Safety Policies and Written Programs. (NOTE: At least one CPR/First Aid Trained person must be on-site during HAZWOPER and confined space entry activities.)

	HAZWOPER TRAINING				OTHER TRAINING								
NAME	INITIAL (DATE)	8HR (DATE)	MGR (DATE)	DOT (DATE)	CSE (DATE)	CPR / First Aid / (DATE)		BBP	MEDICAL (DATE)	FIT TEST MAKE / SIZE / TYPE			(DATE)
Jim Richert	09/88	12/08				12/07	04/06	06/02	09/07	Nor	M-L	FF	05/08
Adam Mazenauer	05/06	06/07							05/07				

SECTION 5: HAZARD ANALYSIS

(A) **ACTUAL OR POTENTIAL PHYSICAL HAZARDS** – (Check all that apply to Malcolm Pirnie activities)

☐ ANIMALS / PLANTS	☐ ELECTRICAL	☐ IONIZING RADIATION	☐ STEEP / UNEVEN
☒ ASBESTOS / LEAD	☒ EXCAVATIONS (See Section 13)	☐ LIGHT RADIATION (i.e., Welding, High Intensity)	☐ TERRAIN
☐ CHEMICAL EXPOSURE (See Section 5B/5C)	☒ EXTREME COLD (See Section 10)	☐ LIMITED CONTACT	☐ TRAFFIC (STRUCK BY)
		☐ MOVING PARTS (LO / TO)	
☐ CONFINED SPACE (See Section 12)	☐ FALL, >6' VERTICAL	☒ NOISE (> 85 dB)	☒ OTHER: Limited lighting in buildings
	☐ FALLING OBJECTS	☐ NON-IONIZING RADIATION	
☐ DEMOLITION	☐ HEAT STRESS	☐ OVERHEAD OBJECTS	
☒ DRILLING	☒ HEAVY EQUIPMT	☐ POWERED PLATFORMS	
☐ DRUM HANDLING	☒ HEAVY LIFTING	☐ POOR VISIBILITY	
	☐ HOT WORK	☐ ROLLING OBJECTS	
☐ DUST, HARMFUL	☐ HUNTING SEASON	☐ SCAFFOLDING	
☒ DUST, NUISANCE	☐ IMMERSION	☐ SHARP OBJECTS	

(B) **PRESENCE OF HAZARDOUS MATERIALS STORED OR USED ON SITE** (CHECK ALL THAT APPLY)

☐ YES By Client / Owner ☐ YES By Malcolm Pirnie (See Section 11) ☒ NO

TYPE

☐ EXPLOSIVES	☐ FLAMMABLE / REACTIVE SOLIDS	☐ RADIOACTIVE	☐ HAZARDOUS WASTE (Stored)
☐ COMPRESSED GASES		☐ CORROSIVE	
☐ FLAMMABLE / COMBUSTIBLE LIQUIDS	☐ OXIDIZERS	☐ MISCELLANEOUS	
	☐ TOXIC / INFECTIOUS	Containers of unknown materials.	

(C) **CHEMICAL HAZARDS OF CONTAMINANTS INFORMATION**

(1) IDENTIFIED CONTAMINANTS - Known or suspected hazardous/toxic materials (attach historical information, physical description, map of contamination and tabulated data, if available)

SUBSTANCES INVOLVED	CHARACTERISTICS	MEDIA	ESTIMATED CONCENTRATIONS	LOWEST PEL, or TLV
111 TCA in soil gas	TO	Soil	Up to 23,000 ppb	☐ PPM ☐ mg/m^3
Metals and PAHs above SCOs in soil				☐ PPM ☐ mg/m^3
				☐ PPM ☐ mg/m^3

Media types: GW (ground water), SW (surface water), WW (wastewater), AIR (air), SL (soil), SD (sediment), WL (waste, liquid), WS (waste, solid), WD (waste, sludge), WG (waste, gas), OT (other).

Characteristics: CA (corrosive, acid), CC (corrosive, caustic), IG (ignitable), RA (radioactive), VO (volatile), TO (toxic), RE (reactive), BIO (infectious), UN (unknown), OT (other, describe

(2) DESCRIBE POTENTIAL FOR CONTACT WITH EACH MEDIA TYPE FOR EACH OF THE MPI TASKS LISTED IN SEC 3 (E):

MPI TASK	ROUTE OF EXPOSURE (INHAL/INGEST/CONTACT/ABSORB)	POTENTIAL FOR CONTACT (HIGH / MEDIUM / LOW)	METHOD OF CONTROL
M1	Ingestion/Contact/inhalation	Low	PPE-Gloves,PID, Air Monitoring
M2	Ingestion/Contact/inhalation	Low	PPE-Gloves,PID, Air Monitoring
M3	Ingestion/contact/Inhalation	Low	PID, Air monitoring
M4	Ingestion/Contact/inhalation	Low	PPE-Gloves,PID, Air Monitoring

The Site Safety Officer will brief the MPI field team on symptoms and signs of overexposure to chemical hazards

SECTION 6: SITE CONTROL MEASURES

(A) WORK ZONES - EXCAVATIONS, DRILLING OPERATIONS, AND HEAVY EQUIPMENT

Adam Mazenauer has been designated to coordinate access control and security for Malcolm Pirnie operations on site. It is a Malcolm Pirnie policy that Malcolm Pirnie personnel will not enter trench or excavate areas without approval of Corporate Health and Safety. A safe perimeter has been established at the boundary of any excavation and/or a safe distance from excavators, drill rigs and other heavy equipment.

These boundaries are identified by: Perimeter fencing

No unauthorized person should be within this area.

(B) WORK ZONES - CONTAMINATION

The prevailing wind conditions are Unknown A wind direction indicator is used to determine daily wind direction. The Command Post is located upwind from the Exclusion Zone or at a sufficient distance to prevent exposure should a release occur.

Control boundaries have been established and Exclusion Zone(s) (the contaminated area) have been identified. (Attach site map)

These boundaries are identified by: Perimeter fencing

No unauthorized person should be within this area.

SECTION 7: SAFETY PROCEDURES / EQUIPMENT REQUIRED

Identify all procedures and equipment needed to eliminate or minimize exposure to hazards identified in Section 5.

- ☐ AIR MONITORING EQUIPMENT (See Section 9)
- ☒ BARRIER TAPE
- ☒ COMMUNICATIONS - ONSITE
- ☒ COMMUNICATIONS - OFFSITE (i.e., cell/digital phones if no other means)
- ☐ CONFINED SPACE PROGRAM & EQUIPMENT (See Section 12)
- ☒ EYE WASH
- ☐ EMERGENCY SHOWERS
- ☐ EMERGENCY AIR HORN
- ☐ FALL PROTECTION PROGRAM & EQUIPMENT
- ☐ FIRE EXTINGUISHER(S) - ABC
- ☒ FIRST AID KIT / BBP KIT
- ☐ FLOTATION DEVICE (USCG)
- ☒ GFCI EXTENSION CORDS
- ☐ HARNESS(S) / LIFELINE(S)
- ☐ INSECT / TICK REPELLANT
- ☐ HUNTING SEASON
- ☐ LADDER(S)
- ☒ LIGHTING - HAND HELD
- ☒ LIGHTING - FIXED / EMERGENCY
- ☐ LOCKOUT/TAGOUT PROGRAM & EQUIPMENT
- ☐ MSDSs – ATTACHED (See Section 11)
- ☐ MSDSs - FACILITY / OTHERS
- ☒ PPE - PHYSICAL HAZARDS (See Section 15)
- ☒ PPE - CHEMICAL HAZARDS (See Section 15)
- ☐ RESPIRATORY PROTECTION PROGRAM & EQUIPMENT (APR) (See Section 15)
- ☐ RESPIRATORY PROTECTION PROGRAM & EQUIPMENT (SAR) (See Section 15)
- ☒ TRAFFIC CONES
- ☐ VENTILATION EQUIPMENT
- ☐ OTHER:

SECTION 8: COMMUNICATIONS AND SAFE WORK PRACTICES

(A) COMMUNICATIONS - ONSITE

Whenever possible, communications between site personnel should be face-to-face. When verbal communications is not possible, radio communications shall be established.

In case of radio communications failure, or when respiratory protection is in use, the following hand signals will be used:

OK; I AM ALL RIGHT; I UNDERSTAND	THUMBS UP
NO; NEGATIVE	THUMBS DOWN
NEED ASSISTANCE	BOTH HANDS ON TOP OF HEAD
DANGER - NEED TO LEAVE AREA, NO QUESTIONS	GRIP PARTNERS WRIST WITH BOTH HANDS
HAVING DIFFICULTY BREATHING	HANDS TO THROAT

(B) COMMUNICATIONS - OFF SITE

If applicable, telephone communication to the Command Post should be established as soon as practical.

Telephone numbers that can be used to reach the command post are: _____ and _____

(C) SAFE WORK PRACTICES

1. A "BUDDY SYSTEM" IN WHICH ANOTHER WORKER IS CLOSE ENOUGH TO RENDER IMMEDIATE AID WILL BE IN EFFECT. CLIENTS AND/OR CONTRACTORS MAY SERVE AS A "DESIGNATED BUDDY."
2. WHERE THE EYES OR BODY MAY BE EXPOSED TO CORROSIVE MATERIALS, SUITABLE FACILITIES FOR QUICK DRENCHING OR FLUSHING SHALL BE AVAILABLE FOR IMMEDIATE USE (SEE SECTION 7).
3. DO NOT KNEEL ON THE GROUND WHEN CHEMICAL PROTECTIVE CLOTHING IS BEING USED.
4. IF DRILLING EQUIPMENT IS INVOLVED, HAVE A CURRENT UTILITY SURVEY, AND KNOW WHERE THE 'KILL SWITCH' IS.
5. CONTACT WITH SAMPLES, EXCAVATED MATERIALS, OR OTHER CONTAMINATED MATERIALS MUST BE MINIMIZED.
6. ALL ELECTRICAL EQUIPMENT USED IN OUTSIDE LOCATIONS, WET AREAS OR NEAR WATER MUST BE PLUGGED INTO GROUND FAULT CIRCUIT INTERRUPTER (GFCI) PROTECTED OUTLETS (SEE SECTION 7).
7. IN THE EVENT OF TREACHEROUS WEATHER-RELATED WORKING CONDITIONS (I.E., THUNDERSTORM, LIMITED VISIBILITY, EXTREME COLD OR HEAT) FIELD TASKS WILL BE SUSPENDED UNTIL CONDITIONS IMPROVE OR APPROPRIATE PROTECTION FROM THE ELEMENTS IS PROVIDED.
8. SMOKING, EATING, CHEWING GUM OR TOBACCO, OR DRINKING ARE FORBIDDEN EXCEPT IN CLEAN OR DESIGNATED AREAS.
9. USE OF CONTACT LENSES NEAR CHEMICALS OR DURING USE OF RESPIRATORY PROTECTION IS PROHIBITED AT ALL TIMES.
10. GOOD HOUSEKEEPING PRACTICES ARE TO BE MAINTAINED.
11. SITE / FACILITY SPECIFIC SAFE WORK PRACTICES:

_____

_____

_____

SECTION 9: ENVIRONMENTAL MONITORING ☐ THIS SECTION NOT APPLICABLE TO SITE ACTIVITIES

(A) The following environmental monitoring instruments shall be used on site at the specified intervals and recorded in the site logbook. (NOTE: If monitoring period is "OTHER", monitoring schedule will be attached to this plan.)

EQUIPMENT	MONITORING PERIOD				ACTION LEVEL
☐ Combustible Gas Indicator	☐ Continuous	☐ Hourly	☐ x Day	☒ Other	
☐ O_2 Meter	☐ Continuous	☐ Hourly	☐ x Day	☐ Other	
☐ Toxics: ☐ CO ☐ H_2S	☐ Continuous	☐ Hourly	☐ x Day	☐ Other	
☐ Other: _____	☐ Continuous	☐ Hourly	☐ x Day	☐ Other	
☒ PID (Lamp 10.6 eV)	☒ Continuous	☐ Hourly	☐ x Day	☐ Other	>5ppm above background
☐ FID					
☐ Colorimetric tubes:					
_____	☐ Continuous	☐ Hourly	☐ x Day	☐ Other	
_____	☐ Continuous	☐ Hourly	☐ x Day	☐ Other	
☐ Radiation: ☐ α ☐ β ☐ gamma	☐ Continuous	☐ Hourly	☐ x Day	☐ Other	
☒ Respirable Dust Meter	☒ Continuous	☐ Hourly	☐ x Day	☐ Other	
☐ Noise Meter	☐ Continuous	☐ Hourly	☐ x Day	☐ Other	
☐ Other:	☐ Continuous	☐ Hourly	☐ x Day	☐ Other	
_____	☐ Continuous	☐ Hourly	☐ x Day	☐ Other	
_____	☐ Continuous	☐ Hourly	☐ x Day	☐ Other	

(B) Monitoring equipment is to calibrated according to manufacturers' instructions. Record calibration data and air concentrations in the Health and Safety on-site log book.

(C) Recommended Action Levels for Upgrade or Downgrade of Respiratory Protection, or Site Shutdown and Evacuation. These are average values. Consideration should be given to the potential for release of highly toxic compounds from the waste or from reaction by-products. Levels are for persistent (> 10 min) breathing zone measurements in non-confined spaces. **For unexpected conditions, stop all work and contact Corporate Health and Safety.**

Oxygen Levels

Less than 19.5%	Level B necessary for work to start / continue. Consider toxicity potential.
19.5% to 23.5%	Work may start / continue. Investigate changes. Continuous monitoring.
Greater than 23.5%	PROHIBITED WORK CONDITION

Flammability / Explosive Hazards

Less than 10% of LEL	Work may start / continue. Consider toxicity potential.
10% to 25% of LEL	Work may start / continue. Continuous monitoring.
Greater than 25% of LEL	PROHIBITED WORK CONDITION.

Uncharacterized Airborne Organic Vapors or Gases

Background*	Work may start / continue. Continue to monitor conditions.
Up to 5 meter units (m.u. or "ppm") above background	Level C necessary for work to start / continue. Continuous monitoring. Use Colorimetric tubes to characterize vapors.
Up to 50 m.u. above background	Level B necessary for work to start / continue. Continuous monitoring.
Greater than 50 m.u.	PROHIBITED WORK CONDITION.

*** Off-site clean air measurement**

Characterized Airborne Organic Vapors or Gases**

Up to 50% of TLV, or PEL or REL	Work may start / continue. Continue to monitor conditions.
Up to 25 times the TLV, or PEL or REL	Level C necessary for work to start / continue. Continuous monitoring.
Up to 500 times the TLV, or PEL or REL	Level B necessary for work to start / continue. Continuous monitoring.
Greater than 500 times the TLV, or PEL or REL	PROHIBITED WORK CONDITION.

** **Use mixture calculations (% allowed = $3C_NEL_N$) if more than one contaminant is present.**

Radiation

Less than 0.5 mR/Hour (500 μR)	Work may start / continue. Continue to monitor conditions.
Up to 1 mR/Hour above background	Work may start / continue with Radiation Safety Officer present on site.
Greater than 1 mR/Hour above background	PROHIBITED WORK CONDITION.

SECTION 10: PERSONAL MONITORING ☒ THIS SECTION NOT APPLICABLE TO SITE ACTIVITIES

(A) PERSONAL EXPOSURE SAMPLING (Consider if high levels of noise or high concentrations of lead, mercury or arsenic are present)

The following personal monitoring will be in effect on site: _____

A copy of personal monitoring results is to be sent to Corporate Health and Safety for inclusion in the Employee's Confidential Exposure Record File.

(B) HEAT / COLD STRESS MONITORING

The expected air temperature will be 30 to 55 ºF. If it is determined that heat stress or cold stress monitoring is required (mandatory for heavy exertion in PPE at temperatures over 70ºF, or at temperatures under 40ºF or wind chill equivalent), the following procedures shall be followed (describe procedures in effect, for heat stress i.e., monitoring body temperature, body weight, pulse rate; for cold stress i.e., appropriate clothing, shelter breaks):

Take breaks as necessary in warm indoor area. Drink warm (non-alcoholic) liquids.

SECTION 11: HAZARD COMMUNICATION PROGRAM ☐ THIS SECTION NOT APPLICABLE TO SITE ACTIVITIES

If chemicals are introduced to the site by Malcolm Pirnie (e.g., decontamination liquids, preservatives, etc.), a copy of the Malcolm Pirnie Hazard Communication Program and Material Safety Data Sheets (MSDSs) of chemicals introduced by Malcolm Pirnie to the site is attached to this plan. The Site Safety Officer will review this information with all field personnel prior to the start of the project, and will inform other employers (e.g., Owner, Contractor and Subcontractors) the availability and location of this information. The Comprehensive List of Chemicals introduced by Malcolm Pirnie to this site is:

Alconox

PID Cal-Gas

Preservatives

All chemicals being introduced to the site, hazardous/potentially hazardous samples prepared at the site, and/or any hazardous materials previously sent to the site, **that will be stored at the site or will be transported from the site by common carrier**, will be packaged, labeled and identified as hazardous materials in accordance with U.S. Department of Transportation (DOT) and/or International Air Transport Association (IATA) regulations by a trained HazMat employee.

(NOTE: At multi-employer sites, the Site Safety Officer will obtain information, if applicable, on hazardous chemicals other employers may produce or introduce to the job site to which Malcolm Pirnie employees may be exposed, including the location of their written hazard communication program(s), labeling program(s), and Material Safety Data Sheet(s).

SECTION 12: CONFINED SPACE ENTRY ☒ THIS SECTION NOT APPLICABLE TO SITE ACTIVITIES

If a permit-required confined space entry will be made on site, a copy of the Malcolm Pirnie Confined Space Entry Program, and a completed Malcolm Pirnie Confined Space Pre-Entry Inspection Check List will be attached to this plan. A Confined Space Entry Permit must be completed and posted outside the confined space prior to entry, and the entry will follow the Malcolm Pirnie Confined Space Entry written program. Permits are to be saved and logged with project documentation.

SECTION 13: EXCAVATION SAFETY ☐ THIS SECTION NOT APPLICABLE TO SITE ACTIVITIES

Excavations being created in order to accomplish Malcolm Pirnie tasks or in progress during Malcolm Pirnie inspection of other activities or tasks, shall be shored or slopped or otherwise protected to prevent accidental collapse prior to entry, in accordance with Subpart F of 29 CFR 1926. It is Malcolm Pirnie policy that Malcolm Pirnie personnel will not enter trench or excavated areas without approval of Corporate Health and Safety. If an entry into an excavation by Malcolm Pirnie personnel is necessary, a Excavation Plan identifying the Competent Person and the protective measure to be used (i.e., sloping, shoring, trench box) will be attached to this plan.

SECTION 14: DECONTAMINATION PROCEDURES ☒ THIS SECTION NOT APPLICABLE TO SITE ACTIVITIES

Personnel and equipment leaving the Site shall be thoroughly decontaminated. The Site Safety Officer is responsible for monitoring adherence with this decontamination plan.

A Equipment decontamination protocol shall be used with the following decontamination stations:

(1) Tap water rinse

(2) Alconox & tap water wash

(3) Distilled water rinse

(4) Or high pressure hot water rinse (steam cleaner)

(5)

(6)

(7)

(8)

(Other)

The following decontamination equipment is required:

☒ Decon Pad (Plastic Sheet) ☐ Dry Brushes ☒ Buckets Other

☐ Trash Cans/Bags ☒ Wet Brushes ☐ Hose / Spray

Alconox Will be used as the decontamination solution

SECTION 15: PERSONAL PROTECTIVE EQUIPMENT

TASK *	RESPIRATORS & CARTRIDGE[1]	USE ** (See Section 16)	CLOTHING ***	GLOVES	BOOTS	OTHER
M1/M2/M3/ M4		UP	N/S	Le, N, L	SL	HH,G,HP

* Same as Section 3E

**UP = Upgrade
CONT = Continuous

***** NOTE:** PPE use will be in accordance with Malcolm Pirnie's Health and Safety Policy and Written Programs.

CODES:

RESPIRATORS[1]
HF = Half Face APR
FF = Full Face APR
ESCBA = Escape Bottle
SAR = Airline
SCBA = SCBA

CARTRIDGES[1]
P = Particulate
OV = Organic Vapors
AG = Acid Gas
Mult = Multi-Gas/Vapor
Other

CLOTHING
N/S = No Special
C = Coveralls
T = Tyvek
Sx = Saranex
PT = PE Tyvek

GLOVES[2]
Co = Cotton
Le = Leather [3]
L = Latex
N = Nitrile
B = Butyl
Neo = Neoprene
V = Viton
PVC = Polyvinyl Chloride
PVA = Polyvinyl Alcohol
Other:

BOOTS
SL = Leather Safety
H = Hip (Fireman)
O = Latex overboots

OTHER
HH = Hard Hat [3]
G = Safety Glasses [3]
GP = Glare Protection
GI = Goggles - Impact
GS = Goggles - Splash
FS = Face Shield
HP = Hearing Protection [3]
RV = Reflective Vests [3]

[3] **Should be considered for all field jobs**

[1] - List all that apply, i.e., FF w/ OV/AG/P

[2] - Use same codes for clothing and boots of same material

Respiratory protection will be upgraded under the following conditions:

Sustained elevated PID readings > 5 ppm above background at breathing zone.

The following cartridge change out schedule is to be followed onsite (attach any calculations to plan):

SECTION 16: EMERGENCY ACTION PLAN

The following standard emergency response procedures will be used by onsite personnel. The Site Safety Officer shall be notified of any onsite emergencies and be responsible for ensuring that the appropriate procedure are followed.

(A) EVACUATION

All work activities are suspended and the site is to be EVACUATED IMMEDIATELY, when there is a threat to life or health as determined by individual good judgment, i.e. fire, hazardous chemical spill, dangerous gas leak, severe weather (i.e., tornado); or when notified by other site / facility staff and local fire or police officials.

If an evacuation is called for, the emergency alarm system for weather-related, medical, fire and other evacuation emergencies is:

Air Horn Blast

Evacuation from the Exclusion Zone should whenever possible occur through the decontamination line. In those situations where egress in this manner cannot occur, the following emergency escape routes have been designated (document on map if possible):

Once evacuated off site, all staff should gather at The Home Depot Store which is a minimum of 250 feet away from the incident

(B) FIRE OR EXPLOSION

Upon discovery of a fire or an explosion, the above-designated emergency signal shall be sounded and all personnel shall assemble at the decontamination line. The fire department is to be notified and all personnel moved to a safe distance (minimum 250') from the involved area.

If a person's clothing should catch fire, burning clothing may be extinguished by having the individual drop to the floor and roll. If necessary, physically restrain the person and roll them around on the floor to smother the flames. Use a fire blanket or extinguisher if one is readily available and you have been trained in its use. Call emergency medical services if not already done so.

If a person's clothing should become saturated with a chemical, douse the individual with water from the nearest safety shower if available. Consult the chemical Material Safety Data Sheets (MSDSs) for further information. Call emergency medical services if indicated by the MSDSs.

NEVER RE-ENTER THE SITE / FACILITY until the emergency has been declared over and permission to re-enter has been given by site / facility health and safety staff or local fire or police officials. If any staff is unaccounted for, notify an individual in charge.

(C) MEDICAL EMERGENCY

If you discover a medical emergency and are by yourself, CALL OUT FOR HELP. When someone arrives, tell them to call for help. If no one comes or you know you are alone, provide whatever care you can for 1 minute, then make the call yourself. (See Section 2)

Upon notification of an injury in the Exclusion Zone, the designated emergency signal shall be sounded. All site personnel shall assemble at the decontamination line. The SSO or alternate should evaluate the nature of the injury, and the affected person should be decontaminated to the extent possible prior to movement to the Support Zone. The onsite CPR/FA personnel shall initiate the appropriate first aid, and contact should be made for an ambulance (and other emergency services as needed) and with the designated medical facility (if required). No persons shall reenter the Exclusion Zone until the cause of the injury or symptoms is determined.

The hospital is 15 minutes from the site. Ambulance response time is 10 minutes.
of St. Mary's Hospital was contacted on 121008 and briefed on the situation, the potential hazards, and the substances involved. When IDLH conditions exist, arrangements should be made for onsite standby of emergency services.
A map for directions to the nearest hospital **is attached** to this plan. If not, the directions are:
5300 Military Road, Lewiston, NY (exit 25A off the I190)

(D) SAFETY EQUIPMENT FAILURE

If any other equipment (i.e., air monitoring) on site fails to operate properly, the FTL and/or SSO shall be notified to determine the effect of this failure on continuing operations on site. If the failure affects the safety of personnel or prevents completion of the Work Plan tasks, all personnel shall leave the work area until the situation is evaluated and appropriate actions taken.

(E) FOLLOW UP

In all situations, when an on site / facility emergency results in evacuation of the work area, or a "large spill" has occurred, staff shall not resume work until:

- The conditions resulting in the emergency have been corrected;
- The hazards reassessed by the SSO and Corporate Health and Safety;
- The HASP has been reviewed by the SSO and Corporate Health and Safety; and
- Site personnel have been briefed on any changes in the HASP by the SSO.

SECTION 17: SPILL CONTAINMENT / CONTROL ☒ THIS SECTION NOT APPLICABLE TO SITE ACTIVITIES

For most chemicals introduced to the worksite, or under control of Malcolm Pirnie employees, spills of chemicals would be considered incidental and would be controlled in the immediate area of the spill. Such spills shall be handled utilizing precautions appropriate for the chemical characteristics specified in the MSDS for the chemical including spill control methods and selection and use of minimum personal protective equipment.

For chemicals introduced to the worksite, or under control of Malcolm Pirnie employees, that would cause a ″large spill″ (greater than 55 gallons), a copy of the appropriate Emergency Response Guidebook (ERG) guide shall be attached to this plan, and a spill response contractor shall be identified in Section 2.

SECTION 18: EMPLOYEE ACKNOWLEDGEMENTS

PLAN REVIEWED BY:		DATE
Project Manager:	Kent McManus	
Project Leader:	Jim Richertt	
Local H&S Coordinator:	Kathy Metzger	
Corporate H & S	Joe Golden	

I acknowledge that I have read the information on this HASP, attached Material Safety Data Sheets (MSDSs), DOT Emergency Response Guides, and Health and Safety Programs.
I understand the site / facility hazards as described and agree to comply with the contents of the plan.

EMPLOYEE (Print Name)

VISITOR (Print Name)

ATTACHED DOCUMENTS

☐ MSDS(s)	☐ Hazard Communication Written Program	☐ Confined Space Entry Written Program	☐ DOT ERG Guides
☐ Site Map	☐ Personal Protective Equipment Written Program	☐ Excavation Safety Plan	☐ Respiratory Protection Program
☒ Hospital Directions	☐ Emergency Action Plan	☐ Evacuation Routes	☐ Cartridge Change Out Calculations
☐ Other			

APPENDIX 1A

New York State Department of Health
Generic Community Air Monitoring Plan

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

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

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

Community Air Monitoring Plan

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

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

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

VOC Monitoring, Response Levels, and Actions

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

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

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

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

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

Particulate Monitoring, Response Levels, and Actions

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

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

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

MAPQUEST

Total Time: 7 minutes **Total Distance: 5.89 miles**

A: 6100 Niagara Falls Blvd, Niagara Falls, NY 14304-1534

START	1: Start out going EAST on NIAGARA FALLS BLVD/US-62 toward BUILDERS WAY.	0.3 mi
NORTH 190	2: Merge onto I-190 N/NIAGARA EXPY via the ramp on the LEFT.	5.3 mi
EXIT	3: Take the RT-265 exit, EXIT 25A, toward LEWISTON.	0.1 mi
	4: Turn LEFT onto MILITARY RD/NY-265.	0.2 mi
END	5: End at 5300 Military Rd Lewiston, NY 14092-1903	

B: 5300 Military Rd, Lewiston, NY 14092-1903

Total Time: 7 minutes **Total Distance: 5.89 miles**

Route to Hospital