LABELLA Associates, D.P.C.
Engineering
Architecture
Environmental
Planning

Interim Remedial Measure
Design Phase Investigation:
Sub-Slab Depressurization System
Site C828187

Location:

3750 Monroe Avenue
Pittsford, New York

Prepared for:

3750 Monroe Avenue, LLC
c/o Norry Management Corp.
1465 Monroe Avenue
Rochester, New York 14618

LaBella Project No. 213131

June 2014

New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 8
6274 East Avon-Lima Road, Avon, New York 14414-9519
Phone: (585) 226-5353 • **Fax: (**585) 226-8139
Website: www.dec.ny.gov

Joe Martens
Commissioner

July 2, 2014

Mr. Lewis Norry
3750 Monroe Avenue Associates, LLC
c/o Norry Management Corporation
1465 Monroe Avenue
Rochester, New York 14618

Dear Mr. Norry:

Subject: 3750 Monroe Avenue, Site #C828187
Interim Remedial Measure Design Phase Investigation: Sub-Slab Depressurization System
June 2014
City of Rochester, Monroe County

The New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health, collectively referred to as the State, has completed its review of the document entitled *"Interim Remedial Measure Design Phase Investigation: Sub-Slab Depressurization System"* (the Work Plan) dated June 2014 for the 3750 Monroe Avenue site located in the Town of Pittsford. In accordance with 6 NYCRR Part 375-1.6, the State has determined that the Work Plan, with modifications, substantially addresses the requirements of the Brownfield Cleanup Agreement. The modifications are outlined as follows:

1. Indoor air samples will be collected in accordance with Attachment A. The indoor air samples will be collected before the start of the diagnostic field testing in Section 5.2 of the Work Plan.

2. **Section 6 – Schedule:** To account for the indoor air sampling task, the Work Plan field activities will be completed within 4 weeks of approval of the Work Plan.

3. **Section 6 – Reporting:** The preliminary indoor air results will be provided to the State electronically upon receipt. The final validated indoor air results and Data Usability Summary Report will be available within 90 days of sample collection and will be submitted to the State as an attachment to the monthly progress report. The validated results and DUSR will also be included in the Interim Remedial Measures Construction Completion Report.

4. **Section 6 – Reporting:** The Interim Remedial Measures Work Plan will include a preliminary assessment regarding the need for emissions controls such as carbon canisters. This assessment will be based on the primary contaminants of concern detected in soil and groundwater, the anticipated volumetric air flow, PID screening data, and other relevant data collected during implementation of the Work Plan.

5. **Section 6 – Reporting:** Rather than providing electrical connection options and potential locations for pipe routing and penetrations, the Interim Remedial Measures Work Plan will provide sufficient detail for the contractor to construct the mitigation system. The Interim Remedial Measures Work Plan will also include a process to be followed to obtain the State's approval for requested field modifications.

With the understanding that the above noted modifications are agreed to, the Work Plan is hereby approved. If you choose not to accept the State's modifications, you are required to notify this office within 20 days after receipt of this letter or prior to the start of field activities. In this event, I suggest a meeting be scheduled to discuss your concerns prior to the end of this 20-day period.

Prior to the start of field activities, please attach a copy of this letter to the Work Plan; send me two (2) hardcopies of the approved Work Plan; and place a copy of the Work Plan in the document repositories established for this site.

Please notify me at least 7 days in advance of the start of field activities.

Thank you for your cooperation in this matter and please contact me at (585) 226-5357 if you have any questions regarding these modifications.

Sincerely,

Frank Sowers

Frank Sowers, P.E.
Environmental Engineer II

Attachment A – Indoor Air Sampling

ec: w/Attach.
James Mahoney
Dan Noll
Jennifer Gillen
Bart Putzig
Bridget Boyd
John Frazer
James Pronti

Attachment A
3750 Monroe Avenue, Site C828187
Monitoring of the Indoor Air

Eleven (11) indoor air samples will be collected with at least one sample being collected from each tenant space except for Pittsford Printing. Approximate indoor air sample locations are provided on Figure 1.

In addition, an outdoor air sample will also be collected from the roof at a location upwind of any air intakes. If a roof sample is not feasible, the outdoor air sample will be collected from a location that is upwind of the building.

Indoor air and outdoor air samples will be collected using six (6) Liter pre-evacuated Summa Canisters® equipped with pre-calibrated laboratory supplied flow regulators set for an 8-hr. draw time. Alternatively, one (1) Liter pre-evacuated Summa Canisters® equipped with pre-calibrated laboratory supplied flow regulators set for an 8-hr. draw time may be used provided there is sufficient sample to a) achieve the required detection limits, and b) analyze multiple samples in the event a dilution analysis or other QA/QC analyses are needed. The Summa Canisters® will be certified clean by the laboratory. Vacuum readings of the canisters will be obtained and documented prior to sample collection, periodically during the collection period, and upon completion of sampling. Sample identification, vacuum readings, flow controller identification numbers, and other relevant information will be recorded on field forms.

Indoor air samples will be collected from a height of approximately three (3)-feet above the floor. Outdoor air samples will be collected near the air intake for the building and approximately three (3)-feet above the roof surface (or three (3)-feet above ground surface if a roof sample is not feasible).

Subsequent to completing indoor and outdoor air sampling, the samples will be sent under chain of custody control to an ELAP-certified laboratory for testing.

To help control for potential contributions from existing tenant operations, samples will be tested for the following limited list of VOCs using USEPA Method TO-15:

- Tetrachloroethene;
- Trichloroethene;
- cis-1,2,-Dichloroethene;
- trans-1,2,-Dichloroethene;
- 1,1-Dichloroethene;
- Vinyl chloride;
- 1,1,1-Trichloroethane;
- 1,1-Dichloroethane;
- 1,2-Dichloroethane; and
- Chloroethane.

The minimum detection limit will be 0.25 $\mu g/m^3$ for trichloroethene and vinyl chloride. The minimum detection limit will be 1 $\mu g/m^3$ for all other compounds.

One duplicate sample will be collected and analytical QA/QC requirements of Method TO-15 will be followed by the laboratory. The laboratory will provide a data package in ASP Category B format. Preliminary and final results will be provided in units of micrograms per cubic meter. A DUSR for the indoor and outdoor air data will be prepared in accordance with DER-10 Appendix 2B. The validated results will also be submitted to the State in an acceptable Environmental Data Deliverable package (EDD) within 90 days of sample collection.

A building inspection consisting of the completion of a building survey and chemical inventory will be conducted in each tenant space and documented on the field forms. The State's writable pdf form may be used for collecting this information in place of DOH's *Indoor Air Quality Questionnaire and Building Inventory* (Appendix B of DOH Soil Vapor Guidance). For this sampling event, the product inventory can focus on the compounds included in the limited analytical list provided above.

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3750 Monroe Avenue
Pittsford, New York

3750 Monroe Avenue Associates, LLC

Historical Mapping

Legend

- Exterior Wall
- Approximate indoor air sample locations. Final locations to be determined in the field.

Issued For: **FINAL**

Date: 04/01/2014
Drawn By: JMG
Reviewed By: DPN

10 0 50
1 inch = 25 feet
Intended to print as ANSI D size.

Modified By: FLS-NYSDEC
Date: 07/01/2014

213131

FIGURE 1

ROSS FIT CONCENTRIX

VOLT/DELTA TOWN OF PITTSFORD SENIOR CENTER

VACANT

BRICK LAYERS

JOHN B. PIKE GENERAL CONTRACTOR ROCHESTER

Cross Fit 1: General Coverage

Turf Time 1: General Coverage

Concentrix 1: General Coverage

Concentrix 2: Approximate location of Sommerville Paper Hazardous Waste Storage Room

Concentrix 3: Occupied area close to the Unoccupied Area where highest levels of COCs detected to date.

Outdoor Air

Unoccupied Area

Volt 1: Approximate location of Telex Hazardous Waste Drum Storage Area

Volt 2: Occupied area close to the Unoccupied Area where highest levels of COCs detected to date.

Brick Layers 1: General Coverage

Town Court 1: Approximate location of Telex TCE degreaser

Maximus 1: Confirm previous indoor air sample results

Senior Center 1: General Coverage

MAXIMUS

J:\Data Management Corporation\21244D\Drawings\Figure 2 Groundwater Contour Map June 15, 2012.mxd

Interim Remedial Measure
Design Phase Investigation:
Sub-Slab Depressurization System
Site C828187

Location:

3750 Monroe Avenue
Pittsford, New York

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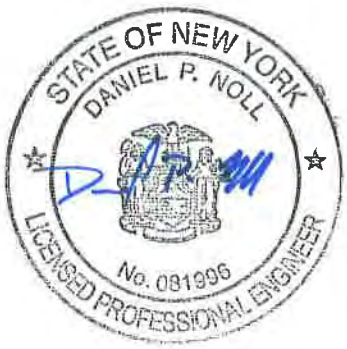
LaBella Project No. 213131

June 2014

LaBella Associates, D.P.C.
300 State Street
Rochester, New York 14614

CERTIFICATIONS

"I DANIEL P. NOLL *certify that I am currently a NYS registered professional engineer and that this Design Phase Investigation Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10)."*



081996	6/20/2014	
NYS Professional Engineer #	Date	Signature

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1.0 Introduction

This Design Phase Investigation (DPI) is being completed to obtain additional data for evaluating and implementing an Interim Remedial Measure (IRM) for a Sub-Slab Depressurization System (SSDS) for the property located at 3750 Monroe Avenue, Pittsford, Monroe County, New York, hereinafter referred to as "the Site". The Site was recently entered into the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP) Site #C828187. A Project Locus Map is included as Figure 1.

2.0 Site Description & Background

The BCP Site boundary is comprised of approximately 9.37 acres. The BCP Site is a portion of the Site Tax Parcel, which is 41.90 acres; however, the BCP Site is 9.37 acres. Figures 1 and 2 attached illustrate the location and surrounding area of the Site. Approximately 6.38 acres of the BCP Site is utilized as a commercial office building and the remainder of the BCP Site is utilized as a parking lot (and associated/adjacent landscaped areas).

The BCP Site is located entirely within the Site Tax Parcel, in the central portion of the Site Tax Parcel. The Site Tax Parcel is bounded by Monroe Avenue to the southwest, a Rochester Gas and Electric (RG&E) transmission line to the northeast, by vacant real property and a developed commercial property southeast, and by several residential properties developed with apartment complexes to the northwest.

The Site Tax Parcel was initially operated by Graflex, Inc. from 1956 until at least 1979 and utilized for industrial purposes, including plating operations and printing. Additional tenants at that time included the Singer Company, Xerox Inc., and General Precision Inc. Historical mapping of the Site indicates the former presence of a "waste disposal testing area" and hazardous waste storage areas on the western side of the Site building (within the BCP Site) prior to the 1980's. Ownership changed several times until purchased by 3750 Monroe Avenue Associates, LLC in 1985. Since that time, 3750 Monroe Avenue Associates, LLC has leased portions of the Site Tax Parcel to various tenants for use including but not limited to the Town of Pittsford Town Court, a printing shop, a senior center, a daycare and various commercial and light industrial operations.

A Phase I ESA was completed by LaBella in May 2012 and the Phase I ESA identified an undated figure of the Site Tax Parcel obtained from the Town Assessor Office that indicates the building uses included (among other things) 'machine shop', 'press room', and 'heat treat' areas. In addition, a review of assessment records obtained from the Town of Pittsford identified the installation of one (1) 2,000-gallon petroleum underground storage tank (UST) at the Site Tax Parcel in 1960. These records included a map which depicted the UST to be located to the west of the Site building.

A Preliminary Phase II ESA of the Site Tax Parcel completed by LaBella in 2012 included conducting a geophysical survey (EM-61 survey), test pitting work and collecting soil and groundwater samples via direct push technology. Additional subsurface testing (soil and groundwater) was completed in the interior portion of the BCP Site in June 2013. Although one anomaly of the size and shape of a UST was identified by the geophysical survey, test pitting activities did not identify any USTs in the pits excavated. However, soil and groundwater samples collected from the BCP Site portion of the Site Tax Parcel identified concentrations of chlorinated volatile organic compounds (VOCs) and some petroleum-related

VOCs above the New York State Department of Environmental Conservation (NYSDEC) Part 703 Groundwater Standards.

2.1 Physical Characteristics of Site

2.1.1 Geology & Hydrogeology

According to the U.S. Department of Agriculture, Monroe County Soil Survey obtained from the Natural Resource Conservation Service (NRCS) website, soils in and around the the BCP Site consist mainly of Schoharie silt loam (approximately 95%), Canandaigua Silt Loam (approximately 4%) and Ontario Loam (less than 1%). The Schoharie series consists of very deep, moderately well drained soils formed from clayey lacustrine sediments. They are on glacial lake plains and uplands mantled with lake sediments. Saturated hydraulic conductivity is moderately high or high in the mineral surface and subsurface and low through moderately high in the subsoil and substratum. Slope ranges from 0 through 60 percent.

Specific Site geologic features are based on 24 borings and three test pits advanced at the Site. Underneath the asphalt pavement (where present), fill material consisting primarily of sand and gravel was encountered in soil borings advanced in the parking areas and gravel-covered areas of the Site. This apparent fill material was observed to depths of up to approximately 1.5-ft. bgs. to an approximate depth of 2 to 5 feet below the ground surface (bgs). In general, native soils encountered beneath the fill material consisted of: sandy silts or silty sands (generally between 1-ft. to 5-ft. bgs); atop clayey silts or silty clays (generally to a depth of 8 to 12 feet bgs); atop silty fine sand (generally to a depth of 12 feet to 16 feet bgs, with the exception of GP-23, see below). Saturated soils were generally encountered in the deeper silty fine sand interval. Trace deposits of pea stone were encountered in silt below the clayey silt layer, generally in the area to the northwest of the Site building, specifically in borings GP-08 and GP-09.

In general, soil borings were advanced to between 12-ft and 16-ft bgs in order to access the water table, however one boring (GP-21) was advanced to direct-push equipment "refusal", which is assumed to have been caused by hard overburden material (clayey silt with gravel). Specifically, refusal was encountered within soil boring GP-21 at a depth of 23.8 feet bgs.

Groundwater was encountered within the monitoring wells installed at the Site at depths ranging from approximately 1.5 feet BGS (MW-19) to 9 feet BGS (MW-15). Based upon a well head elevation survey and static water levels, groundwater flow beneath the Site, on the southern side of the Creek, is interpreted to be generally to the north. Figure 2 illustrates the locations of previous subsurface explorations and groundwater flow.

2.1.2 Demography, Land Use and Water Use

The Site is proximate to residential, urban, commercial, industrial, agricultural and recreational areas. The Site is currently zoned as "Monroe Avenue Transitional Zone Planned Unit Development" (MATZ PUD) and is surrounded by the same. The nearest agricultural use is approximately 3,800 feet east of the BCP Site. A walking trail is located on the RG&E owned-property located approximately 650 feet to the northeast of the BCP Site and the Erie Canal Heritage Trail is located approximately 1,600 feet to the southeast of the BCP Site.

2.2 Previous Environmental Investigations

Previous Environmental reports completed for the Site are listed below and were included in the BCP Application.

- *Phase I Environmental Site Assessment, 3750 Monroe Avenue, Rochester, New York,* prepared by Passero Associates, dated September 2004
- *Phase I Environmental Site Assessment, 3750 Monroe Avenue, Rochester, New York,* prepared by LaBella Associates, P.C., dated May 2012
- *Phase II Environmental Site Assessment, 3750 Monroe Avenue, Rochester, New York,* prepared by LaBella Associates, P.C., dated January 2013
- *Building Pressurization Assessment, 3750 Monroe Avenue, Pittsford, New York,* prepared by LaBella Associates, P.C., dated January 2013
- *Limited Interior Subsurface Evaluation, 3750 Monroe Avenue, Pittsford, New York,* Prepared by LaBella Associates, P.C., dated July 2013

LaBella's 2012 Phase II ESA included the completion of twenty-four (24) direct-push soil borings (of which eighteen (18) are associated within the proposed BCP Site) and three (3) test pits. A total of twelve (12) borings advanced on the Site Tax Parcel were converted to groundwater monitoring wells and a temporary monitoring well was installed in boring GP-13 to collect a grab groundwater sample. Soil samples were submitted for laboratory analysis from nine (9) soil borings and one (1) test pit. Fifteen (15) groundwater samples were collected, fourteen of which were collected from the proposed Site. All soil and groundwater samples were submitted for laboratory analysis of volatile organic compounds (VOCs) and select samples were also submitted for analysis of semi-volatile organic compounds (SVOCs), metals, pesticides and PCBs. It should be noted that seven (7) soil borings and four (4) monitoring wells were installed at the Site Tax Parcel but outside of the proposed BCP boundary. The BCP boundary was developed based on the lack of impacts observed in those test points.

3.0 Contaminants of Concern

A Remedial Investigation is being planned for the Site; however, currently the known contaminants of concern (COCs) at the Site are chlorinated VOCs. Chlorinated VOCs detected in soil and groundwater at the Site are planned to be mitigated via a Sub-Slab Depressurization System (SSDS).

4.0 Standards, Criteria and Guidance Values

This section identifies the Standards, Criteria and Guidelines (SCGs) applicable for the SSDS work. It should be noted that additional SCGs will be identified in future reports for soil and groundwater; however, for the purpose of the SSDS the SCGs identified below will be utilized:

Soil Gas SCGs: Currently, no state regulatory (NYSDEC or NYSDOH) guidance values exist for soil gas.

Sub-Slab Soil Vapor and Indoor Air SCGs: The NYSDOH *Guidance for Evaluating Soil Vapor Intrusion in the State of New York* dated October 2006 is utilized for the SCG for soil vapor and indoor air.

Effluent/Discharges from Vent Systems: Air Guide 1 Guidelines for the Control of Toxic Ambient Air Contaminants will be utilized for effluent/discharges from vent systems. It should be noted that the Air Guide 1 will be utilized for evaluation of the permanent SSDS system; however, this is not applicable for the Design Phase Investigation.

5.0 Field Activities Plan

5.1 Summary of the Design Phase Investigation Goals

The goal of the Design Phase Investigation is to perform a series of sub-slab air communication tests to determine an efficient and optimized design for the construction of a SSDS for the mitigation of potential soil vapor intrusion. The subject area shall consist of the entire footprint of the occupied structure on this Site, with specific locations selected to gain an understanding of area of influence of typical suction cavities.

The work intends to obtain sufficient information to design a SSDS capable of creating and maintaining a minimum negative air pressure differential of 0.004 water column inches (wci), sub-slab to ambient air, for the subject area. In the event that Site conditions prohibit achievement of this pressure differential, the minimum negative air pressure differential may be alternately specified.

The field activities include the following tasks presented in the following subsections:

- Diagnostic Field Testing (Section 5.2)
- Investigation Derived Waste (Section 5.3)
- Health and Safety and Community Air Monitoring (Section 5.4)

5.2 Diagnostic Field Testing

LaBella will work with Mitigation Tech of Brockport, New York, to complete the diagnostic testing and subsequent design work to determine suction point placement, the location and performance requirements of vacuum fans, important installation details and associated costs. The following will be completed by Mitigation Tech as part of the diagnostic testing:

- Examine the floor surfaces for material defects and potential leaks.
- Drill small diameter vacuum holes and/or 5" core borings into the lowest level concrete slab at anticipated permanent suction point locations. All larger diameter coreholes will be temporarily sealed with polycarbonate sheeting and urethane caulk when not being utilized as part of the diagnostic testing.
- Drill small diameter (approximately ½") holes to be utilized for vacuum monitoring points (pressure field extension tests). All small diameter coreholes will be temporarily sealed with closed cell backer rod and urethane caulk when not being utilized as part of the diagnostic testing.

- The exact number and location of vacuum/suction holes and monitoring points is not specified herein. Rather, the number and location of such holes will be based on sub-slab characteristics encountered at the time of work in each particular section of the building. The necessary number of holes and monitoring points will be based on completing the goal of the investigation and Site constraints. However, at a minimum for preliminary study, it is anticipated that four unique slab sections (i.e., areas of the building) will be tested and the test of each area will include creating 4-6 slab penetrations for applying vacuum.
- The installed suction points will be tested by applying a known vacuum (4.0 wci to 40 wci) to potential suction points and make differential pressure measurements (using a digital manometer) at various neighboring test points to estimate the expected radius of influence for typical suction points.
- Volumetric air flow analysis will also be completed to determine the number of suction points that can be supported by particular blower types, and calculate required pipe sizes.
- All suctions points utilized for testing will be piped to an exterior location for discharge of the sub-slab soil vapor.
- At the end of each work shift (and prior to tenant re-occupying and/or fully occupying the space), all floor penetrations will be sealed. Specifically, the following sealing techniques will be utilized:
    - Small diameter holes will be repaired with urethane caulk applied over a closed cell back rod.
    - Large diameter holes will be covered with polycarbonate sheeting adhered with urethane caulk.
    - Large diameter holes not planned for use in a permanent system will be sealed with masonry.

In addition to the above diagnostic testing, a photo-ionization detector (PID) will be utilized to collect screening level data for total VOCs at the time of the work. LaBella will collect the following data as part of this screening:

- Each floor coring location (suction cavity or monitoring point) will be screened subsequent to coring and prior to any vacuum being applied.
- The discharge of each vacuum test will be screened at the startup of each test, the approximate midpoint and prior to discontinuing each test. The timeframe of each test and volumetric air flow will be documented.

5.3 Investigation Derived Waste

Good housekeeping practices will be followed during all work to prevent leaving material on the floor surface. Specifically, plastic sheeting will be placed onto the floor in areas of floor coring and where suction cavities will be created. All subsurface materials will be containerized and placed in 55-gallon drums for storage and then subsequent characterization and disposal. Any material that does spill on to the floor surface will be promptly picked up and placed in its appropriate container and the floor will be cleaned.

5.4 Health and Safety and Community Air Monitoring

It should be noted that the building contains numerous tenant spaces that are fully utilized. Based on this and the nature of the work, the work will be completed during off-hours (nights and weekends). In general, this will eliminate and/or minimize tenant occupants being within the space during field activities. However, based on some tenant operations still having some staff 24-hrs a day and/or having secure/sensitive documents requiring a representative to be on-site with any visitors, some tenant occupants may be within the building at the time of the work. However, all individuals not directly involved with the planned work will be absent from the room in which the work will occur during work that will expose subsurface materials. In the event a large open room is being worked in, individuals not directly involved with the work will be at least 30 feet from the work zone. Furthermore, all exhaust vents, openings and conduits and discharge points of such shall be evaluated and understood prior to proceeding with any subsurface work. It should also be noted that engineering controls will be utilized as part of the planned work and these include: sealing all penetrations when not in use for diagnostic testing, applying a vacuum to the coreholes and venting the sub-slab soil vapor to the exterior, evaluating and confirming the types and extents of vents, conduits, etc. from the work area and securing these as necessary.

LaBella's Health and Safety Plan (HASP) for this project is included as Appendix 1.

The NYSDOH Generic Community Air Monitoring Plan (CAMP) and Fugitive Dust and Particulate Monitoring will be utilized for this Design Phase Investigation and is included as Appendix 2. Based on the nature of the work some modifications/clarifications are warranted for the CAMP monitoring. These are provided below:

- All work will be completed within the building and thus upwind/downwind monitoring will be modified. Specifically, a background reading for VOCs and fugitive dust will be established at each work area prior to conducting any subsurface penetrations and then monitoring will be conducted within the work zone (approximate 5-ft. radius area around floor penetration). The action levels will be applied to the edge of the work zone.
- Subsequent to completing work and sealing the floor penetration (see Section 5.2) a reading for VOCs will be recorded to confirm background levels have been established.
- Fugitive dust monitoring will be completed in accordance with the NYSDOH Guidance and as noted above; however, it should be noted that coring of the concrete floor will likely create some minimal dust for a short duration and wet techniques will be employed to minimize this issue.

6.0 Schedule and Reporting (Deliverables)

Schedule

The Design Phase Investigation field activities are anticipated to be completed within 3 weeks of approval of the work plan. Subsequent to completing the field activities, an Interim Remedial Measures Work Plan will be submitted within 4 weeks of completing field activities.

Reporting

The results of the diagnostic testing will be documented in an Interim Remedial Measures Work Plan. The following items are anticipated to be included in this work plan:

- Evaluation of sub-slab air communication data obtained as part of the Design Phase Investigation.
- Professional design analysis to optimize fan and piping configuration and to minimize disturbance to interior improvements and operation.
- Investigation of column and wall footings to determine trenching requirements.
- Summary of electrical connection options.
- Potential locations for pipe routing and penetrations.
- Summary of floor surfaces and identification of any material defects and potential leaks identified.
- Assess options for placing carbon filtering equipment. It should be noted that the need for treatment of the effluent of the SSDS will be determined at a later date and not as part of this Design Phase Investigation.

The IRM Work Plan will also include SSDS plans in accordance with the NYSDOH October 2006 Guidance on Soil Vapor Intrusion. The SSDS plans will include location and types of suction cavities, vacuum fans, pipe and other key components, and a description of procedures and techniques to be employed during installation.

J:\NORRY MANAGEMENT CORP\213131 - BCP APPLICATION 3750 MONROE AVE\REPORTS\DESIGN PHASE INVESTIGATION SSDS.DOCX

LaBella Associates, D.P.C.

300 State Street
Rochester, New York 14614

Figures

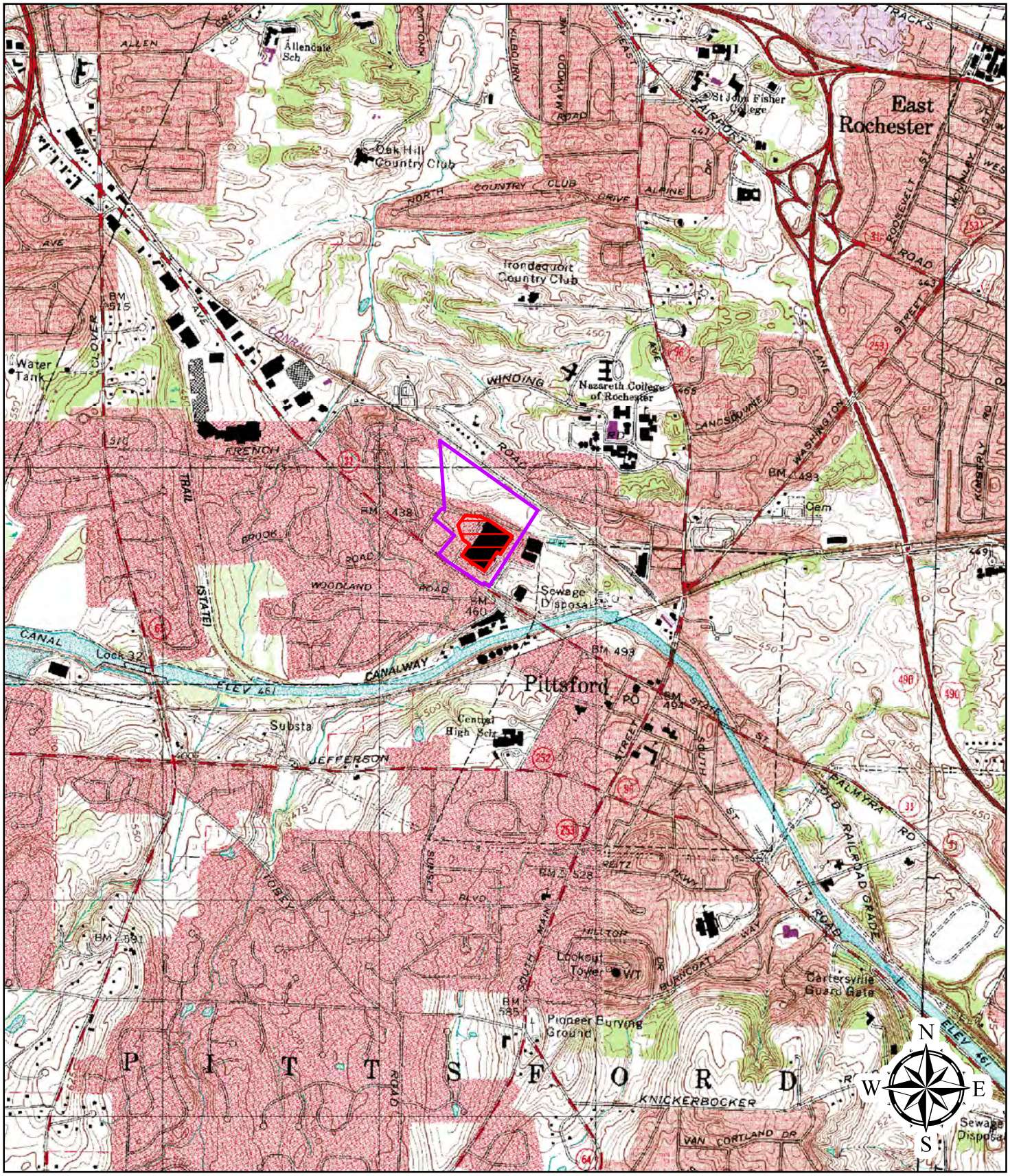

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FIGURE 1

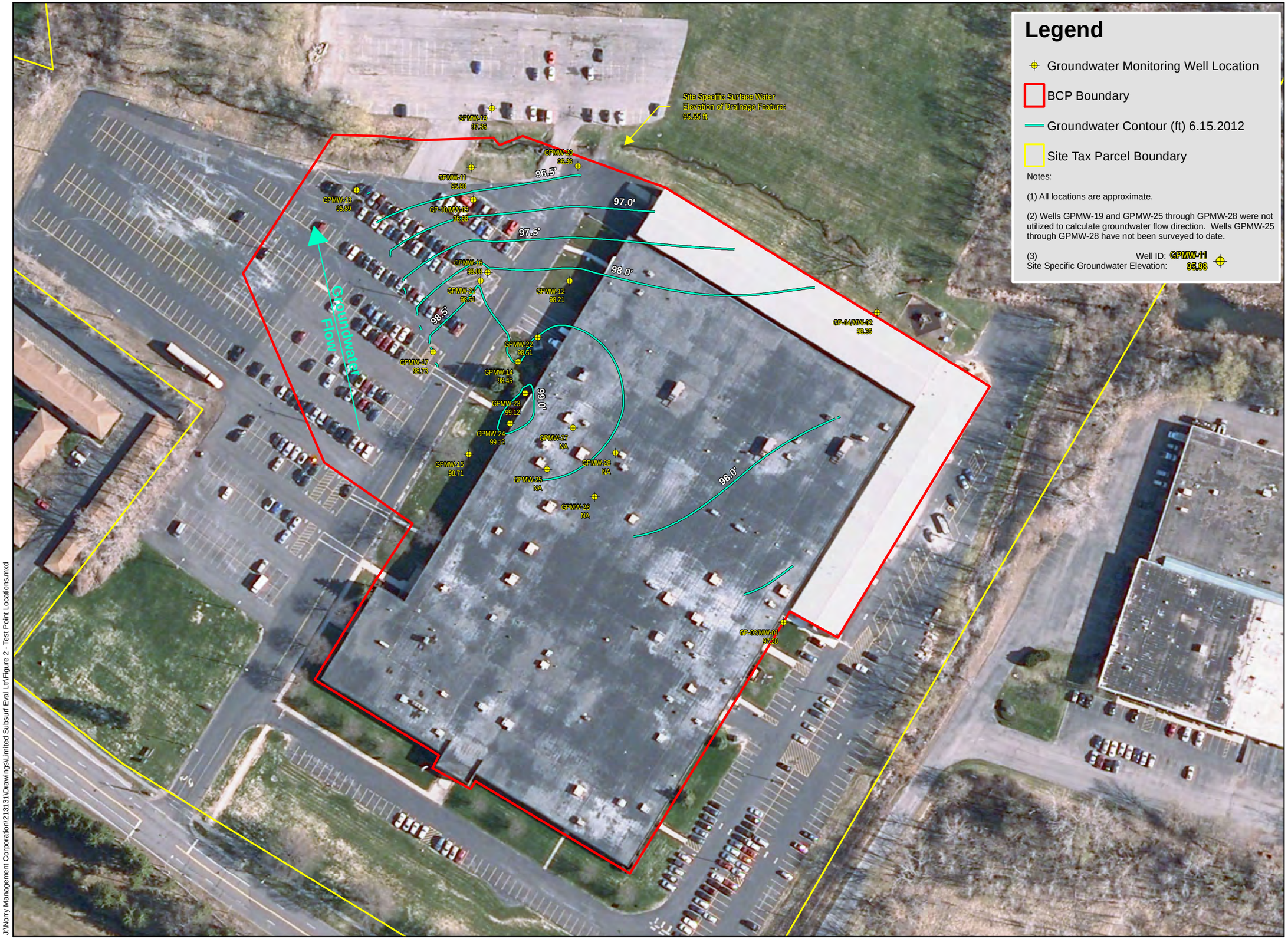
Design Phase Investigation
C828187
3750 Monroe Avenue
Pittsford, New York

Legend

- BCP Boundary
- Site Tax Parcel Boundary

Scale:
1:24,000

Path: \\projects2\projectsNZ\Norry Management Corp\213131 - BCP Application 3750 Monroe Ave\Drawings\DPI\Figure 1 USGS.mxd



Legend

- Groundwater Monitoring Well Location
- BCP Boundary
- Groundwater Contour (ft) 6.15.2012
- Site Tax Parcel Boundary

Notes:

(1) All locations are approximate.

(2) Wells GPMW-19 and GPMW-25 through GPMW-28 were not utilized to calculate groundwater flow direction. Wells GPMW-25 through GPMW-28 have not been surveyed to date.

(3) Well ID: GPMW-11
Site Specific Groundwater Elevation: 95.98

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Design Phase Investigation
C828187
3750 Monroe Avenue
Pittsford, New York

3750 Monroe Avenue
Associates, LLC

Subsurface
Investigation Locations

N
W E
S

50 0 50

1 inch = 100 feet
Intended to print as 11" x 17" size.

213131

FIGURE 2

J:\Norry Management Corporation\213131\Drawings\Limited Subsurf Eval Lrt\Figure 2 - Test Point Locations.mxd

LaBella Associates, D.P.C.

300 State Street
Rochester, New York 14614

Appendix 1

Health & Safety Plan

Site Health and Safety Plan

Location:

3750 Monroe Avenue
Pittsford, New York 14534

Prepared For:

3750 Monroe Avenue Associates
c/o Norry Management Corporation
1465 Monroe Avenue
Rochester, New York 14618

LaBella Project No. 213131

June 2014

Site Health and Safety Plan

Location:

3750 Monroe Avenue
Pittsford, New York 14534

Prepared For:

3750 Monroe Avenue Associates
c/o Norry Management Corporation
1465 Monroe Avenue
Rochester, New York 14618

LaBella Project No. 213131

June 2014

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Table 1 Exposure Limits and Recognition Qualities

SITE HEALTH AND SAFETY PLAN

Project Title:	3750 Monroe Avenue Brownfield Cleanup Program
Project Number:	213131
Project Location (Site):	3750 Monroe Avenue, Pittsford, New York 14534
Environmental Director:	Gregory Senecal, CHMM
Project Manager:	Dan Noll, P.E.
Plan Review Date:	June, 6 2014
Plan Approval Date:	June, 6 2014
Plan Approved By:	Mr. Richard Rote, CIH
Site Safety Supervisor:	Steve Rife
Site Contact:	Kevin Chick
Safety Director:	Rick Rote, CIH
Proposed Date(s) of Field Activities:	To Be Determined
Site Conditions:	9.37 acres; approximately 6.38 of which is utilized as a commercial office building and the remainder of which is utilized as a parking lot
Site Environmental Information Provided By:	❑ Phase I Environmental Site Assessment, 3750 Monroe Avenue, Rochester, New York, prepared by Passero Associates, dated September 2004 ❑ Phase I Environmental Site Assessment, 3750 Monroe Avenue, Rochester, New York, prepared by LaBella Associates, P.C., dated May 2012 ❑ Phase II Environmental Site Assessment, 3750 Monroe Avenue, Rochester, New York, prepared by LaBella Associates, P.C., dated January 2013 ❑ Building Pressurization Assessment, 3750 Monroe Avenue, Pittsford, New York, prepared by LaBella Associates, P.C., dated January 2013 ❑ Limited Interior Subsurface Evaluation, 3750 Monroe Avenue, Pittsford, New York, prepared by LaBella Associates, P.C., dated July 2013

Air Monitoring Provided By: LaBella Associates, P.C.

Site Control Provided By: Contractor(s)

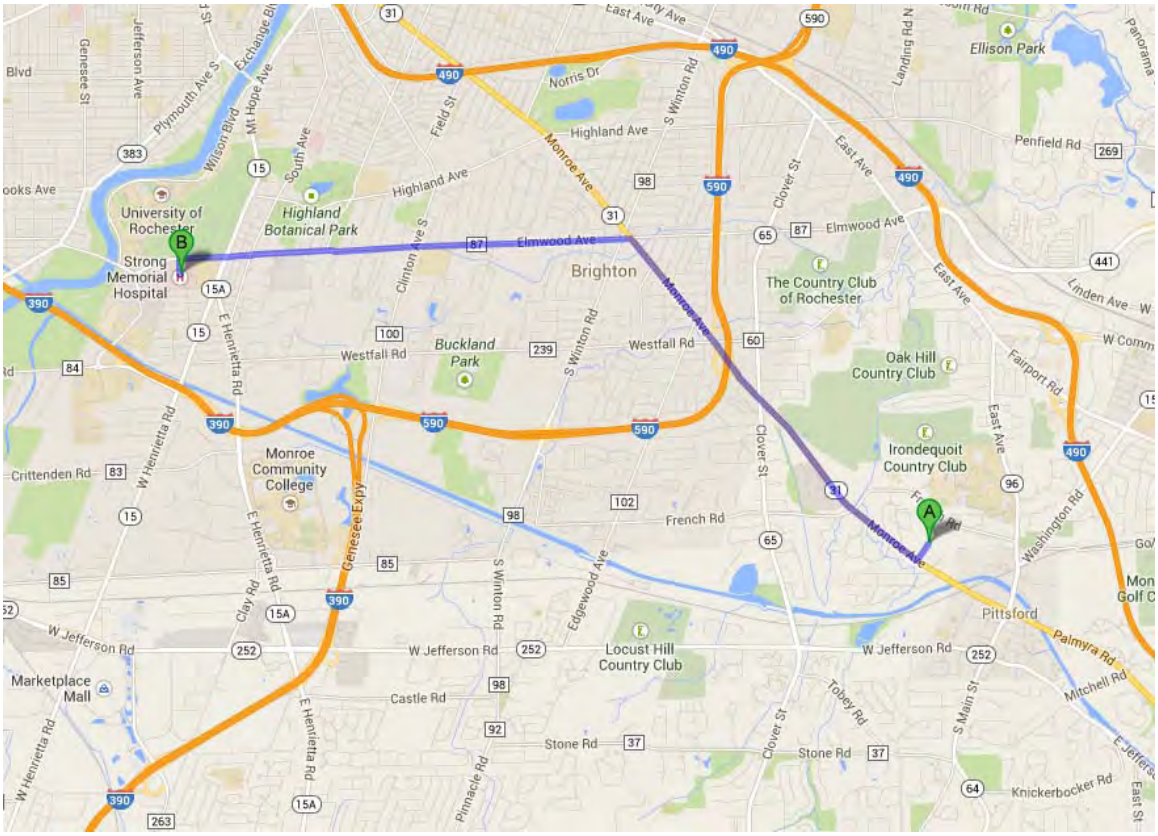
EMERGENCY CONTACTS

	Name	Phone Number
Ambulance:	As Per Emergency Service	911
Hospital Emergency:	Strong Memorial Hospital	585-275-2100
Poison Control Center:	Finger Lakes Poison Control	716-275-5151
Police (local, state):	Monroe County Sheriff	911
Fire Department:	Pittsford Fire Department	911
Site Contact:	Kevin Chick	Cell: 585-303-9543
Agency Contact:	NYSDEC – Frank Sowers NYSDOH – Bridget Callahan Finger Lakes Poison Control MCDOH – John Frazer	585-226-5357 518-402-7860 1-800-222-1222 585-274-6904
Environmental Director:	Greg Senecal, CHMM	Direct: 585-295-6243 Cell: 585-752-6480
Project Manager:	Dan Noll, P.E.	Direct: 585-295-6611 Cell: 585-301-8458
Site Safety Supervisor:	Steve Rife	Cell: 585-755-9244
Safety Director	Rick Rote, CIH	Direct: 585-295-6241

MAP AND DIRECTIONS TO THE MEDICAL FACILITY - STONG MEMORIAL HOSPITAL

Total Est. Time: 15 minutes **Total Est. Distance:** 6.0 miles

1:	Start out going NORTHWEST on MONROE AVE / NY-31 toward BRITTANY LN.	2.9 miles
2:	Turn LEFT onto ELMWOOD AVE	3.0 miles
3:	Turn LEFT onto THOMAS H. JACKSON DR.	0.1 miles
4:	End at **601 Elmwood Ave** Rochester, NY 14642	



1.0 Introduction

The purpose of this Health and Safety Plan (HASP) is to provide guidelines for responding to potential health and safety issues that may be encountered during the Remedial Investigation (RI) at 3750 Monroe Avenue in the Town/Village of Pittsford, Monroe County, New York (Site). This HASP only reflects the policies of LaBella Associates P.C. The requirements of this HASP are applicable to all approved LaBella personnel at the work site. This document's project specifications, and the Community Air Monitoring Plan (CAMP), are to be consulted for guidance in preventing and quickly abating any threat to human safety or the environment. The provisions of the HASP do not replace or supersede any regulatory requirements of the USEPA, NYSDEC, OSHA or other regulatory bodies.

2.0 Responsibilities

This HASP presents guidelines to minimize the risk of injury to project personnel, and to provide rapid response in the event of injury. The HASP is applicable only to activities of approved LaBella personnel and their authorized visitors. The Project Manager shall implement the provisions of this HASP for the duration of the project. It is the responsibility of LaBella employees to follow the requirements of this HASP, and all applicable company safety procedures.

3.0 Activities Covered

The activities covered under this HASP are limited to the following:

- Management of environmental investigation and remediation activities
- Environmental Monitoring
- Collection of samples
- Management of excavated soil and fill

4.0 Work Area Access and Site Control

The contractor(s) will have primary responsibility for work area access and site control.

5.0 Potential Health and Safety Hazards

This section lists some potential health and safety hazards that project personnel may encounter at the project site and some actions to be implemented by approved personnel to control and reduce the associated risk to health and safety. This is not intended to be a complete listing of any and all potential health and safety hazards. New or different hazards may be encountered as site environmental and site work conditions change. The suggested actions to be taken under this plan are not to be substituted for good judgment on the part of project personnel. At all times, the Site Safety Officer has responsibility for site safety and his instructions must be followed.

5.1 Hazards Due to Heavy Machinery

Potential Hazard:
Heavy machinery including trucks, excavators, backhoes, etc will be in operation at the site. The presence of such equipment presents the danger of being struck or crushed. Use caution when working near heavy machinery.

Protective Action:
Make sure that operators are aware of your activities, and heed operator's instructions and warnings. Wear bright colored clothing and walk safe distances from heavy equipment. A hard hat, safety glasses and steel toe shoes are required.

5.2 Excavation Hazards

Potential Hazard:
Excavations and trenches can collapse, causing injury or death. Edges of excavations can be unstable and collapse. Toxic and asphyxiant gases can accumulate in confined spaces and trenches. Excavations that require working within the excavation will require air monitoring in the breathing zone (refer to Section 9.0).

Excavations left open create a fall hazard which can cause injury or death.

Protective Action:
Personnel must receive approval from the Project Manager to enter an excavation for any reason. Subsequently, approved personnel are to receive authorization for entry from the Site Safety Officer. Approved personnel are not to enter excavations over 4 feet in depth unless excavations are adequately sloped. Additional personal protective equipment may be required based on the air monitoring.

Personnel should exercise caution near all excavations at the site as it is expected that excavation sidewalls will be unstable. Do not proceed closer than 3 feet to an unsupported or non-sloped excavation side wall.

Fencing and/or barriers accompanied by "no trespassing" signs should be placed around all excavations when left open for any period of time when work is not being conducted.

5.3 Cuts, Punctures and Other Injuries

Potential Hazard:
In any excavation and construction work site there is the potential for the presence of sharp or jagged edges on rock, metal materials, and other sharp objects. Serious cuts and punctures can result in loss of blood and infection.

Protective Action:
The Project Manager is responsible for making First Aid supplies available at the work site to treat minor injuries. The Site Safety Officer is responsible for arranging the transportation of authorized on-site personnel to medical facilities when First Aid treatment in not sufficient. Do not move seriously injured workers. All injuries requiring treatment are to be reported to the Project Manager. Serious injuries are to be reported immediately to the Site Safety Officer

5.4 Injury Due to Exposure of Chemical Hazards

Potential Hazards:
Contaminants identified in testing locations at the Site include various chlorinated solvents including but not limited to trichloroethylene (TCE) and methylene chloride and some metals have also been identified. Volatile organic vapors, chlorinated solvents or other chemicals may be encountered during excavation activities at the project work site. Inhalation of high concentrations of volatile organic vapors can cause headache, stupor, drowsiness, confusion and other health effects. Skin contact can cause irritation, chemical burn, or dermatitis. It should also be noted that historic information (waste manifests) from previous Site operations indicated these chemicals being disposed of from the Site: 1,1,1-trochloroethane, ethanol, tetrachloroethene (PCE), isopropyl alcohol, propylene glycol, methyl ether, waste polychlorinated biphenyl-containing (PCBs) transformer oil, waste paint related material (methylene phosphoric acid), potassium hydroxide ethanol, isopropyl alcohol, waste coal tar pitch, naphthalene, and methylene phosphoric acid.

Protective Action:
The presence of organic vapors may be detected by their odor and by monitoring instrumentation. Approved employees will not work in environments where hazardous concentrations of organic vapors are present. Air monitoring (refer to Section 9.0) of the work area will be performed at least every 60 minutes or more often using a Photoionization Detector (PID). Personnel are to leave the work area whenever PID measurements of ambient air exceed 25 ppm consistently for a 5 minute period. In the event that sustained total volatile organic compound (VOC) readings of 25 ppm are encountered personnel should upgrade personal protective equipment to Level C (refer to Section 8.0) and an Exclusion Zone should be established around the work area to limit and monitor access to this area (refer to Section 6.0).

5.5 Injuries due to extreme hot or cold weather conditions

Potential Hazards:
Extreme hot weather conditions can cause heat exhaustion, heat stress and heat stroke or extreme cold weather conditions can cause hypothermia.

Protective Action:
Precaution measures should be taken such as dress appropriately for the weather conditions and drink plenty of fluid. If personnel should suffer from any of the above conditions, proper techniques should be taken to cool down or heat up the body and taken to the nearest hospital if needed.

6.0 Work Zones

In the event that conditions warrant establishing various work zones (i.e., based on hazards - Section 5.4), the following work zones should be established:

Exclusion Zone (EZ):
The EZ will be established in the immediate vicinity and adjacent downwind direction of site activities that elevate breathing zone VOC concentrations to unacceptable levels based on field screening. These site activities include contaminated soil excavation and soil sampling activities.

If access to the site is required to accommodate non-project related personnel then an EZ will be established by constructing a barrier around the work area (yellow caution tape and/or construction fencing). The EZ barrier shall encompass the work area and any equipment staging/soil staging areas necessary to perform the associated work. The contractor(s) will be responsible for establishing the EZ and limiting access to approved personnel. Depending on the condition for establishing the EZ, access to the EZ may require adequate PPE (e.g., Level C).

Contaminant Reduction Zone (CRZ):
The CRZ will be the area where personnel entering the EZ will don proper PPE prior to entering the EZ and the area where PPE may be removed. The CRZ will also be the area where decontamination of equipment and personnel will be conducted as necessary.

7.0 Decontamination Procedures

Upon leaving the work area, approved personnel shall decontaminate footwear as needed. Under normal work conditions, detailed personal decontamination procedures will not be necessary. Work clothing may become contaminated in the event of an unexpected splash or spill or contact with a contaminated substance. Minor splashes on clothing and footwear can be rinsed with clean water. Heavily contaminated clothing should be removed if it cannot be rinsed with water. Personnel assigned to this project should be prepared with a change of clothing whenever on site.

Personnel will use the contractor's disposal container for disposal of PPE.

8.0 Personal Protective Equipment

Generally, site conditions at this work site require level of protection of Level D or modified Level D; however, air monitoring will be conducted to determine if up-grading to Level C PPE is required (refer to Section 9.0). Descriptions of the typical safety equipment associated with Level D and Level C are provided below:

Level D:
Hard hat, safety glasses, rubber nitrile sampling gloves, steel toe construction grade boots, etc.

Level C:
Level D PPE and full or ½-face respirator and tyvek suit (if necessary). [*Note: Organic vapor cartridges are to be changed after each 8-hours of use or more frequently.*]

9.0 Air Monitoring

According to 29 CFR 1910.120(h), air monitoring shall be used to identify and quantify airborne levels of hazardous substances and health hazards in order to determine the appropriate level of employee protection required for personnel working onsite. Air monitoring will consist at a minimum of the procedure listed below. Air monitoring instruments will be calibrated and maintained in accordance with the manufacturer's specifications.

The Air Monitor will utilize a photoionization detector (PID) to screen the ambient air in the work areas (excavation, soil staging, and soil grading areas) for total Volatile Organic Compounds (VOCs) and a

DustTrak tm Model 8520 aerosol monitor or equivalent for measuring particulates. Work area ambient air will generally be monitored in the work area and downwind of the work area. Air monitoring of the work areas and downwind of the work areas will be performed at least every 60 minutes using a PID and the DustTrak meter.

If sustained PID readings of greater than 25 ppm are recorded in the breathing zone, either personnel are to leave the work area until satisfactory readings are obtained or approved personnel may re-enter the work areas wearing at a minimum a ½ face respirator with organic vapor cartridges for an 8-hour duration (i.e., upgrade to Level C PPE). Organic vapor cartridges are to be changed after each 8-hour use or more frequently, if necessary. If PID readings are sustained, in the work area, at levels above 50 ppm for a 5 minute average, work will be stopped immediately until safe levels of VOCs are encountered or additional PPE will be required (i.e., Level B).

If downwind PID measurements reach or exceed 25 ppm consistently for a 5 minute period downwind of the work area, PID readings will be taken within the buildings (if occupied) on Site to ensure that the vapors are not penetrating any occupied building and effecting the personnel working within. If the PID measurements reach or exceed 25 ppm within the nearby buildings, the personnel should be evacuated via a route in which they would not encounter the work area. The building should then be ventilated until the PID measurements within the building are at or below background levels.

10.0 Emergency Action Plan

In the event of an emergency, employees are to turn off and shut down all powered equipment and leave the work areas immediately. Employees are to walk or drive out of the Site as quickly as possible, wait at the assigned 'safe area' and follow the instructions of the Site Safety Officer.

Employees are not authorized or trained to provide rescue and medical efforts. Rescue and medical efforts will be provided by local authorities.

11.0 Medical Surveillance

Medical surveillance will be provided to all employees who are injured due to overexposure from an emergency incident involving hazardous substances at this site.

12.0 Employee Training

Personnel who are not familiar with this site plan will receive training on its entire content and organization before working at the Site.

Individuals involved with the remedial investigation must be 40-hour OSHA HAZWOPER trained with current 8-hour refresher certification.

J:\Norry Management Corp\213131 - BCP Application 3750 Monroe Ave\Reports\HASP

Table 1
Exposure Limits and Recognition Qualities

Compound	PEL-TWA (ppm)(b)(d)	TLV-TWA (ppm)(c)(d)	STEL (ppm)(b)	LEL (%)(e)	UEL (%)(f)	IDLH (ppm)(g)(d)	Odor	Odor Threshold (ppm)	Ionization Potential
Acetone	750	500	NA	2.15	13.2	20,000	Sweet	4.58	9.69
Anthracene	.2	.2	NA	NA	NA	NA	Faint aromatic	NA	NA
Benzene	1	0.5	5	1.3	7.9	3000	Pleasant	8.65	9.24
Benzo (a) pyrene (coal tar pitch volatiles)	0.2	0.1	NA	NA	NA	700	NA	NA	NA
Benzo (a)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo (b) Fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo (g,h,i)perylene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo (k) Fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA	NA	NA	NA	NA	10.88
Carbon Disulfide	20	1	NA	1.3	50	500	Odorless or strong garlic type	.096	10.07
Chlorobenzene	75	10	NA	1.3	9.6	2,400	Faint almond	0.741	9.07
Chloroform	50	2	NA	NA	NA	1,000	ethereal odor	11.7	11.42
Chrysene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethylene	200	200	NA	9.7	12.8	400	Acrid	NA	9.65
1,2-Dichlorobenzene	50	25	NA	2.2	9.2		Pleasant		9.07
Ethyl Alcohol	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100	100	NA	1.0	6.7	2,000	Ether	2.3	8.76
Fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropyl Alcohol	400	200	500	2.0	12.7	2,000	Rubbing alcohol	3	10.10
Isopropylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	500	50	NA	12	23	5,000	Chloroform-like	10.2	11.35
Naphthalene	10, Skin	10	NA	0.9	5.9	250	Moth Balls	0.3	8.12
n-propylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phosphoric Acid	1	1	3	NA	NA	10,000	NA	NA	NA
Polychlorinated Biphenyl	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium Hydroxide	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA
p-Isopropylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethane	NA	NA	NA	NA	NA	NA	Sweet	NA	NA
Toluene	100	100	NA	0.9	9.5	2,000	Sweet	2.1	8.82
Trichloroethylene	100	50	NA	8	12.5	1,000	Chloroform	1.36	9.45
1,2,4-Trimethylbenzene	NA	25	NA	0.9	6.4	NA	Distinct	2.4	NA
1,3,5-Trimethylbenzene	NA	25	NA	NA	NA	NA	Distinct	2.4	NA
Vinyl Chloride	1	1	NA	NA	NA	NA	NA	NA	NA
Xylenes (o,m,p)	100	100	NA	1	7	1,000	Sweet	1.1	8.56
Metals									
Arsenic	0.01	0.2	NA	NA	NA	100, Ca	NA	NA	NA
Cadmium	0.2	0.5	NA	NA	NA	NA	NA	NA	NA
Calcium	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	1	0.5	NA	NA	NA	NA	NA	NA	NA
Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.05	0.15	NA	NA	NA	700	NA	NA	NA
Mercury	0.05	0.05	NA	NA	NA	28	NA	NA	NA
Selenium	0.2	0.02	NA	NA	NA	Unknown	NA	NA	NA

(a) Skin = Skin Absorption
(b) OSHA-PEL Permissible Exposure Limit (flame weighted average, 8-hour): NIOSH Guide, June 1990
(c) ACGIH – 8 hour time weighted average from Threshold Limit Values and Biological Exposure Indices for 2003.
(d) Metal compounds in mg/m3
(e) Lower Exposure Limit (%)
(f) Upper Exposure Limit (%)
(g) Immediately Dangerous to Life or Health Level: NIOSH Guide, June 1990.

Notes:
1. All values are given in parts per million (PPM) unless otherwise indicated.
2. Ca = Possible Human Carcinogen, no IDLH information.

LaBella Associates, D.P.C.

300 State Street
Rochester, New York 14614

Appendix 2

Community Air Monitoring Plan

Appendix 1A
New York State Department of Health
Generic Community Air Monitoring Plan

Overview

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 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 DEC/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, particularly if wind direction changes. 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.

1. 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.

2. 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.

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

4. All 15-minute readings must be recorded and be available for State (DEC and NYSDOH) 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.

1. 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.

2. 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.

3. All readings must be recorded and be available for State (DEC and NYSDOH) and County Health personnel to review.

December 2009

Appendix 1B
Fugitive Dust and Particulate Monitoring

A program for suppressing fugitive dust and particulate matter monitoring at hazardous waste sites is a responsibility on the remedial party performing the work. These procedures must be incorporated into appropriate intrusive work plans. The following fugitive dust suppression and particulate monitoring program should be employed at sites during construction and other intrusive activities which warrant its use:

1. Reasonable fugitive dust suppression techniques must be employed during all site activities which may generate fugitive dust.

2. Particulate monitoring must be employed during the handling of waste or contaminated soil or when activities on site may generate fugitive dust from exposed waste or contaminated soil. Remedial activities may also include the excavation, grading, or placement of clean fill. These control measures should not be considered necessary for these activities.

3. Particulate monitoring must be performed using real-time particulate monitors and shall monitor particulate matter less than ten microns (PM10) with the following minimum performance standards:

(a) Objects to be measured: Dust, mists or aerosols;
(b) Measurement Ranges: 0.001 to 400 mg/m3 (1 to 400,000 :ug/m3);
(c) Precision (2-sigma) at constant temperature: +/- 10 :g/m3 for one second averaging; and +/- 1.5 g/m3 for sixty second averaging;
(d) Accuracy: +/- 5% of reading +/- precision (Referred to gravimetric calibration with SAE fine test dust (mmd= 2 to 3 :m, g= 2.5, as aerosolized);
(e) Resolution: 0.1% of reading or 1g/m3, whichever is larger;
(f) Particle Size Range of Maximum Response: 0.1-10;
(g) Total Number of Data Points in Memory: 10,000;
(h) Logged Data: Each data point with average concentration, time/date and data point number
(i) Run Summary: overall average, maximum concentrations, time/date of maximum, total number of logged points, start time/date, total elapsed time (run duration), STEL concentration and time/date occurrence, averaging (logging) period, calibration factor, and tag number;
(j) Alarm Averaging Time (user selectable): real-time (1-60 seconds) or STEL (15 minutes), alarms required;
(k) Operating Time: 48 hours (fully charged NiCd battery); continuously with charger;
(l) Operating Temperature: -10 to 50^{o} C (14 to 122^{o} F);
(m) Particulate levels will be monitored upwind and immediately downwind at the working site and integrated over a period not to exceed 15 minutes.

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

5. The action level will be established at 150 ug/m3 (15 minutes average). While conservative,

this short-term interval will provide a real-time assessment of on-site air quality to assure both health and safety. If particulate levels are detected in excess of 150 ug/m3, the upwind background level must be confirmed immediately. If the working site particulate measurement is greater than 100 ug/m3 above the background level, additional dust suppression techniques must be implemented to reduce the generation of fugitive dust and corrective action taken to protect site personnel and reduce the potential for contaminant migration. Corrective measures may include increasing the level of personal protection for on-site personnel and implementing additional dust suppression techniques (see paragraph 7). Should the action level of 150 ug/m3 continue to be exceeded work must stop and DER must be notified as provided in the site design or remedial work plan. The notification shall include a description of the control measures implemented to prevent further exceedances.

6. It must be recognized that the generation of dust from waste or contaminated soil that migrates off-site, has the potential for transporting contaminants off-site. There may be situations when dust is being generated and leaving the site and the monitoring equipment does not measure PM10 at or above the action level. Since this situation has the potential to allow for the migration of contaminants off-site, it is unacceptable. While it is not practical to quantify total suspended particulates on a real-time basis, it is appropriate to rely on visual observation. If dust is observed leaving the working site, additional dust suppression techniques must be employed. Activities that have a high dusting potential--such as solidification and treatment involving materials like kiln dust and lime--will require the need for special measures to be considered.

7. The following techniques have been shown to be effective for the controlling of the generation and migration of dust during construction activities:

(a) Applying water on haul roads;
(b) Wetting equipment and excavation faces;
(c) Spraying water on buckets during excavation and dumping;
(d) Hauling materials in properly tarped or watertight containers;
(e) Restricting vehicle speeds to 10 mph;
(f) Covering excavated areas and material after excavation activity ceases; and
(g) Reducing the excavation size and/or number of excavations.

Experience has shown that the chance of exceeding the 150ug/m3 action level is remote when the above-mentioned techniques are used. When techniques involving water application are used, care must be taken not to use excess water, which can result in unacceptably wet conditions. Using atomizing sprays will prevent overly wet conditions, conserve water, and provide an effective means of suppressing the fugitive dust.

8. The evaluation of weather conditions is necessary for proper fugitive dust control. When extreme wind conditions make dust control ineffective, as a last resort remedial actions may need to be suspended. There may be situations that require fugitive dust suppression and particulate monitoring requirements with action levels more stringent than those provided above. Under some circumstances, the contaminant concentration and/or toxicity may require additional monitoring to protect site personnel and the public. Additional integrated sampling and chemical analysis of the dust may also be in order. This must be evaluated when a health and safety plan is developed and when appropriate suppression and monitoring requirements are established for protection of health and the environment.