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

Sub-Slab Depressurization System Work Plan
NYSDEC Site #828023

Location:

575 Colfax Street
Former Emerson Street Landfill
Rochester, New York

Prepared for:

City of Rochester
Division of Environmental Quality
Room 300-B
Rochester, New York 14614

LaBella Project No. 210173

November 2016

Sub-Slab Depressurization System Work Plan
NYSDEC Site #828023

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November 2016

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

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1.0 Introduction

LaBella Associates, D.P.C. (LaBella) is pleased to submit this Sub-Slab Depressurization System (SSDS) Work Plan to activate the current passive venting system in place at 575 Colfax Street within the City of Rochester, Monroe County, New York, herein after referred to as the "Site". The Site is located on the Former Emerson Street Landfill (FESL). A Site Location Map is included as Figure 1. LaBella is submitting this SSDS Work Plan on behalf of the City of Rochester's Division of Environmental Quality (City DEQ). This work is being completed as part of the New York State Department of Environmental Conservation (NYSDEC) Order on Consent between NYSDEC and the City.

1.1 Site Description and Background

The Site boundary is comprised of approximately 0.31 ± acres. Figure 1 attached illustrates the location and surrounding area of the Site. The Site is utilized as a school bus garage repair facility since approximately 1982. The Site is bounded to the north by a high school, Edison Tech, to the west-northwest by a municipal plot of land where a solar field is currently being constructed, to the east Colfax Street and commercial properties to the south.

The Site is located on the FESL which was operated by the City beginning between sometime in the 1940s until 1971. The City began investigating and remediating potential soil vapor (SVI) issues at the FESL in 2009 after entering into an Order on Consent with the NYSDEC. The City established a Property Owner Soil Vapor Intrusion Technical Assistance Program in which allowed all FESL property owners to have their properties evaluated for and, if warranted, mitigated for SVI by the City.

1.2 Previous Investigations

The following reports related to SVI at the Site are:

- *Soil Vapor Intrusion Assessment Report*, completed by LaBella, June 2011 for The City of Rochester's Division of Environmental Quality; and
- *Soil Vapor Intrusion Investigation Work Plan*, completed by LaBella, February 2016 for The City Of Rochester's Division of Environmental Quality.

The initial SVI assessment consisted of a building inventory and field screening of indoor air conducted at buildings across the FESL from 2009-2011 in order to select buildings for SVI testing. The results of the initial FESL-wide assessment concluded that certain properties including the Site (i.e., 575 Colfax) warranted SVI testing. A passive methane vent system was depicted on building plans from 1981. Methane was encountered during the 2010 building assessment at elevated levels in three locations (a hydraulic lift pit, an electrical outlet box, and a bathroom floor drain).

SVI testing was completed at the Site in March 2016 in accordance with the January 2016 SVI Investigation Work Plan that was approved both by the NYSDEC and NYSDOH (refer to section 1.3 for additional information).

1.3 Soil Vapor Intrusion Testing and Results

SVI sampling and analysis consisted of the collection of two (2) collocated sub-slab and indoor air samples in addition to one (1) outdoor air sample (as a control sample) in March, 2016 over an approximate 6-hour timeframe. Samples were sent to Centek Laboratory in Syracuse, NY under standard chain of custody procedures for analysis of a select list of FESL-related VOCs detected during previous subsurface investigative activities, using United States Environmental Protection Agency (USEPA) method TO-15. Laboratory results were validated by a third party validator and a Data Usability Summary Report (DUSR) was prepared.

SVI sampling results were compared to the Air Guidelines and the decision matrices in the NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York Guidance Document dated October 2006 and subsequent updates for tetrachloroethylene (PCE) and trichloroethene (TCE) in 2013 and 2015, respectively (NYSDOH Guidance Document).

As summarized in the attached Table 1, TCE was detected in indoor air samples at 3.4 micrograms per cubic meter (ug/m^3) and 3.1 ug/m^3 which exceed the NYSDOH air guideline of 2 ug/m^3 for TCE derived by the NYSDOH in Table 3.1 of the NYSDOH Guidance Document as amended in 2015. In addition, PCE was detected in indoor air samples at 4.1 ug/m^3 and 3.7 ug/m^3 which do not exceed the air guideline of 30 ug/m^3 for PCE derived by the NYSDOH in Table 3.1 of the NYSDOH Guidance Document as amended in 2013. A comparison of detected compounds in sub-slab and indoor air to the NYSDOH Guidance Document Decision Matrices indicate mitigation is warranted due to the concentrations of TCE and PCE detected. It should be noted that the Site has been utilized as a bus repair garage since approximately 1983 and it is possible that TCE and/or PCE may be associated with products used by the bus garage. Refer to Figure 2 for sample locations and results.

1.4 Standards, Criteria and Guidelines

This section identifies the Standards, Criteria and Guidelines (SCGs) for vapor intrusion at the Site. The SCGs identified are used in order to quantify the SVI issues at the Site that requires mitigation work based on the cleanup goal. The SCGs utilized as part of the implementation of this SSDS Work Plan are identified below:

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.

2.0 Objective

Typical mitigation systems for buildings with SVI include a SSDS. A SSDS is very similar to a radon system in that it creates negative pressure under the floor slab, which removes vapors from beneath the slab and mitigates the potential for vapors to enter indoor air space. A passive SSDS is currently installed beneath the building and consists of at least one (1) header pipe approximately 110-ft. in length oriented east-west through the center of the Site Building with several north-south branches extending from the header pipe. One vertical riser pipe is located on the west interior wall that extends through the roof. The

existing system will be made active with the addition of an exhaust fan (refer to section 4.1 for more information). This work will be completed in the next few months under the existing access agreement.

The overall objective for this work plan is to activate the SSDS and confirm adequate pressure field extension.

3.0 Summary of the Remedial Goals

The Remedial Goals for this SSDS Work Plan are as follows:

- Install a fan at the end of vertical exterior exhaust pipe to create negative sub-slab pressure beneath the floor slab, thus mitigating soil vapor intrusion issues within these areas of the Site building.

4.0 Field Activities Plan

4.1 Sub-Slab Depressurization System Installation

4.1.1 System Overview

LaBella retained AP Plumbing in July 2016 to scope the existing sub-slab piping using a sewer camera. The assessment was conducted from the vertical riser pipe on the west side of the building. The assessment determined that there is a 4-inch (in.) diameter east-west header pipe centered in the building which is solid for approximately 83-ft. from the west wall and perforated from 83-ft. from the west wall to 111-ft. from the west wall where it terminates. Twelve (12) north-south branches (assumed to be perforated) were observed connected to the header pipe; however, the camera was not able to travel down the north-south pipes. A Site Plan drawing dated 1981includes a layout for a "Methane Vent Schematic" which depicts the east-west header pipe observed in July 2016, as well as two (2) additional 4-in. perforated pipes, parallel to the header pipe to the north and south, equidistant between the center header pipe and the north and south exterior walls. Refer to Figure 3 for observed piping. It should be noted that additional sub-slab piping may be present based on the 1981 Site Plan.

Mitigation Tech conducted a pilot test in September 2016 which consisted of drilling two (2) small diameter (approximately ½-in.) holes through the slab within the bus repair area and measuring sub-slab pressure while operating a blower connected to the existing SSDS vertical riser pipe. The blower was operated outside the building, and methane and photoionization detector (PID) readings were continuously measured at the riser pipe. In addition, sub-slab pressure at the previously installed sampling points in the office area was measured (refer to Figure 3 for monitoring locations). Negative pressure was observed in the sub-slab at each of the points measured, ranging between -0.02 and -0.06 inches of water column ("wc). The pilot test determined the existing passive venting piping in the subsurface is adequate to provide complete coverage for the 16,153 square feet (sq. ft.) building with a single fan.

4.1.2 Fan Installation

The system described above will remain in place at the Site and a fan (Plastec Storm 12 Series intrinsically safe blower) will be connected to the vent piping. The work will be completed in substantial accordance with the NYSDOH *Guidance for Evaluating Soil Vapor Intrusion in the State of New York* dated October 2006 (and associated amendments). The actual suction point will be connected to the existing 4" riser pipe at the west end of the building. The existing vertical header pipe is located within

the building; however; the header pipe will be re-located to the exterior wall. The old interior exhaust stack will be abandoned (sealed on both ends). A vacuum indicator will be installed in the interior near the pipe. The fan will provide sub-slab depressurization via 4" PVC pipe to roof exhaust. The fan exterior will mount above grade on building and will be fastened to the building with brackets. The motor will have a speed controller and weather housing.

4.1.3 System Installation Details

In addition to the scope of work described above, the following work will be completed at the Site: floor cracks will be sealed, and other openings to sub-slab will be sealed with urethane sealant. Four (4) vacuum test points will be installed and used in addition to the existing test points to monitor the efficiency of the system during startup. At completion a smoke test and backdraft test will be performed, the pressure differentials will be measured and documented. The components will be labeled. Upon completion and system startup, a Construction Completion Report (CCR) will be provided along with operational instructions.

4.2 Health and Safety and Community Air Monitoring

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 is included as Appendix 2.

5.0 SSDS Work Plan Schedule and Reporting – Deliverables

Implementation of the SSDS Work Plan is scheduled to begin within 30 days after NYSDEC approval of this work plan. The field work is anticipated to require 30 days to complete subsequent to the approval of the SSDS Work Plan. A CCR will be completed documenting the system installation, including as-built drawings and pressure field extension testing results and submitted to NYSDEC and NYSDOH.

LaBella Associates, D.P.C.
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Tables

Table 1
Former Emerson Street Landfill
575 Colfax Street
Soil Vapor Intrusion Testing
March 2016

Sample ID	575-SVI-1	575-SVI-2	575-IAQ-1	575-IAQ-2	575-Outdoor	NYSDOH Sub-Slab Vapor Concentration Decision Matrix (minimum action level) (1)	NYSDOH Indoor Air Concentration (minimum action level) (1)	USEPA (2001) (BASE) Database - 90th Percentile (2)
Sample Location	**Sub-Slab**	**Sub-Slab**	**Indoor Air**	**Indoor Air**	**Outdoor Air**			
Sample Date	**3/19/2016**	**3/19/2016**	**3/19/2016**	**3/19/2016**	**3/19/2016**			
1,1,1-Trichloroethane	<0.82	<0.82	<0.82	<0.82	<0.82	<100***	<3***	20.6
1,1-Dichloroethane	<0.61	<0.61	<0.61	<0.61	<0.61	NL	NL	<0.7
1,1-Dichloroethene	<0.59	<0.59	<0.59	<0.59	<0.59	<5**	<0.25**	<1.4
Chloroethane	<0.40	<0.40	<0.40	<0.40	<0.40	NL	NL	<1.1
Chloromethane	<0.31	<0.31	1.6 J	1.6 J	1.6	NL	NL	3.7
cis-1,2-Dichloroethene	<0.59	<0.59	<0.59	<0.59	<0.59	NL	NL	<1.9
Tetrachloroethylene	35	**530**	4.1 J	3.7 J	1.0	<100***	<3*** / 30*	15.9
trans-1,2-Dichloroethene	<0.59	<0.59	<0.59	<0.59	<0.59	NL	NL	NL
Trichloroethene	**19 J**	**470 J**	3.4 J	3.1 J	0.75	<5 **	<0.25** / 2*	4.2
Vinyl Chloride	<0.38	1.9	<0.10	<0.10	<0.10	<5**	<0.25**	<1.9

Notes:

Concentrations in micrograms per cubic meter (ug/m^3)

Samples analyzed by USEPA Method TO-15

< indicates the concentration was not detected above the reporting limit

(1) New York State Department of Health (NYSDOH), Guidance for Evaluating Soil Vapor Intrusion in the State of New York. [Note: This Guidance uses a combination of indoor air and sub-slab soil vapor when comparing to the matrices. In addition, for compounds not listed in the matrices an overall site approach is employed which utilizes the USEPA BASE Database (see 2. below) as typical background for commercial buildings and also uses the outdoor air sample, refer to Guidance document for details.]

(2) USEPA Building Assessment and Survey Evaluation (BASE) Database (90th Percentile). As recommended in Section 3.2.4 of the NYSDOH Guidance (Refer to Footnote "1") this database is referenced for the indoor air sampling results. This database is also referenced to provide initial benchmarks for comparison to the air sampling data and does not represent regulatory standards or compliance values.

***** = Air Guideline Values obtained from Table 3.1, NYSDOH, Guidance for Evaluating Soil Vapor Intrusion in the State of New York as updated by a September 2013 Fact Sheet for PCE and an August 2015 Fact Sheet for TCE.

****** = Guideline Value obtained from Soil Vapor/Indoor Air Matrix 1 (minimum action level), NYSDOH, Guidance for Evaluating Soil Vapor Intrusion in the State of New York.

******* = Guidance Value obtained from Soil Vapor/Indoor Air Matrix 2 (minimum action level), NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York.

Bold type denotes that the compound was detected at a concentration that was found to exceed the NYSDOH Sub-Slab Vapor Concentration Decision Matrix (minimum action level).

Underlined type denotes that the compound was detected at a concentration that was found to exceed the NYSDOH Indoor Air Concentration (minimum action level).

Red values are above Air Guideline Derived by NYSDOH in Table 3.1 of NYSDOH Guidance titled "Evaluating Soil Vapor Intrusion in the State of New York", October 2006 (and subsequent updates).

Blue font represents changes made in the Data Usability Summary Report (DUSR)

U indicates the DUSR deemed the concentration undetected

Table 1
Former Emerson Street Landfill
575 Colfax Street
Soil Vapor Intrusion Testing
March 2016

NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006 Decision Matrices

MATRIX 1- TRICHLOROETHENE
INDOOR AIR CONCENTRATION (ug/m^3)

	Sample IDs				IAQ-1 (3.4) IAQ-2 (3.1)	
			<0.25	0.25 to <1	1 to <5.0	5.0 and above
SUB-SLAB VAPOR CONCENTRATION (ug/m^3)		<5	1. No further action	2. Take reasonable and practical actions to identify source(s) and reduce exposure	3. Take reasonable and practical actions to identify source(s) and reduce exposure	4. Take reasonable and practical actions to identify source(s) and reduce exposure
	SVI-1 (19)	5 to <50	5. No further action	6. MONITOR	7. MONITOR	8. MITIGATE
		50 to <250	9. MONITOR	10. MONITOR/ MITIGATE	11. MITIGATE	12. MITIGATE
	SVI-2 (470)	250 and above	13. MITIGATE	14. MITIGATE	15. MITIGATE	16. MITIGATE

MATRIX 1- VINYL CHLORIDE
INDOOR AIR CONCENTRATION (ug/m^3)

	Sample IDs		IAQ-2 (<0.10)			
			<0.25	0.25 to <1	1 to <5.0	5.0 and above
SUB-SLAB VAPOR CONCENTRATION (ug/m^3)	**SVI-2 (1.9)**	<5	1. No further action	2. Take reasonable and practical actions to identify source(s) and reduce exposure	3. Take reasonable and practical actions to identify source(s) and reduce exposure	4. Take reasonable and practical actions to identify source(s) and reduce exposure
		5 to <50	5. No further action	6. MONITOR	7. MONITOR	8. MITIGATE
		50 to <250	9. MONITOR	10. MONITOR/ MITIGATE	11. MITIGATE	12. MITIGATE
		250 and above	13. MITIGATE	14. MITIGATE	15. MITIGATE	16. MITIGATE

MATRIX 2- TETRACHLOROETHYLENE
INDOOR AIR CONCENTRATION (ug/m^3)

	Sample IDs			IAQ-1 (4.1) IAQ-2 (3.7)		
			<3	3 to <30	30 to <100	100 and above
SUB-SLAB VAPOR CONCENTRATION (ug/m^3)	**SVI-1 (35)**	<100	1. No further action	2. Take reasonable and practical actions to identify source(s) and reduce exposure	3. Take reasonable and practical actions to identify source(s) and reduce exposure	4. Take reasonable and practical actions to identify source(s) and reduce exposure
	SVI-2 (530)	100 to <1,000	5. MONITOR	6. MONITOR/ MITIGATE	7. MITIGATE	8. MITIGATE
		1,000 and above	9. MITIGATE	10. MITIGATE	11. MITIGATE	12. MITIGATE

No further action: Given that the compound was not detected in the indoor air sample and that the concentration detected in the sub-slab vapor sample is not expected to significantly affect indoor air quality, no additional actions are needed to address human exposures.

Take steps to identify source(s) and reduce exposures: The concentration detected in the indoor air sample is likely due to indoor and/or outdoor sources rather than soil vapor intrusion given the concentration detected in the sub-slab vapor sample. Therefore, steps should be taken to identify potential source(s) and to reduce exposures accordingly (e.g., by keeping containers tightly capped or by storing volatile organic compound-containing products in places where people do not spend much time, such as a garage or outdoor shed).

Monitor: Monitoring, including sub-slab vapor, basement air, lowest occupied living space air, and outdoor air sampling, is needed to determine whether concentrations in the indoor air or sub-slab vapor have changed. Monitoring may also be needed to determine whether existing building conditions (e.g., positive pressure heating, ventilation and air-conditioning systems) are maintaining the desired mitigation endpoint and to determine whether changes are needed. The type and frequency of monitoring is determined on a site-specific and building-specific basis, taking into account applicable environmental data and building operating conditions. Monitoring is an interim measure required to evaluate exposures related to soil vapor intrusion until contaminated environmental media are remediated.

Mitigate: Mitigation is needed to minimize current or potential exposures associated with soil vapor intrusion. The most common mitigation methods are sealing preferential pathways in conjunction with installing a sub-slab depressurization system, and changing the pressurization of the building in conjunction with monitoring. The type, or combination of types, of mitigation is determined on a building-specific basis, taking into account building construction and operating conditions. Mitigation is an interim measure implemented to address exposures related to soil vapor intrusion until contaminated environmental media are remediated.

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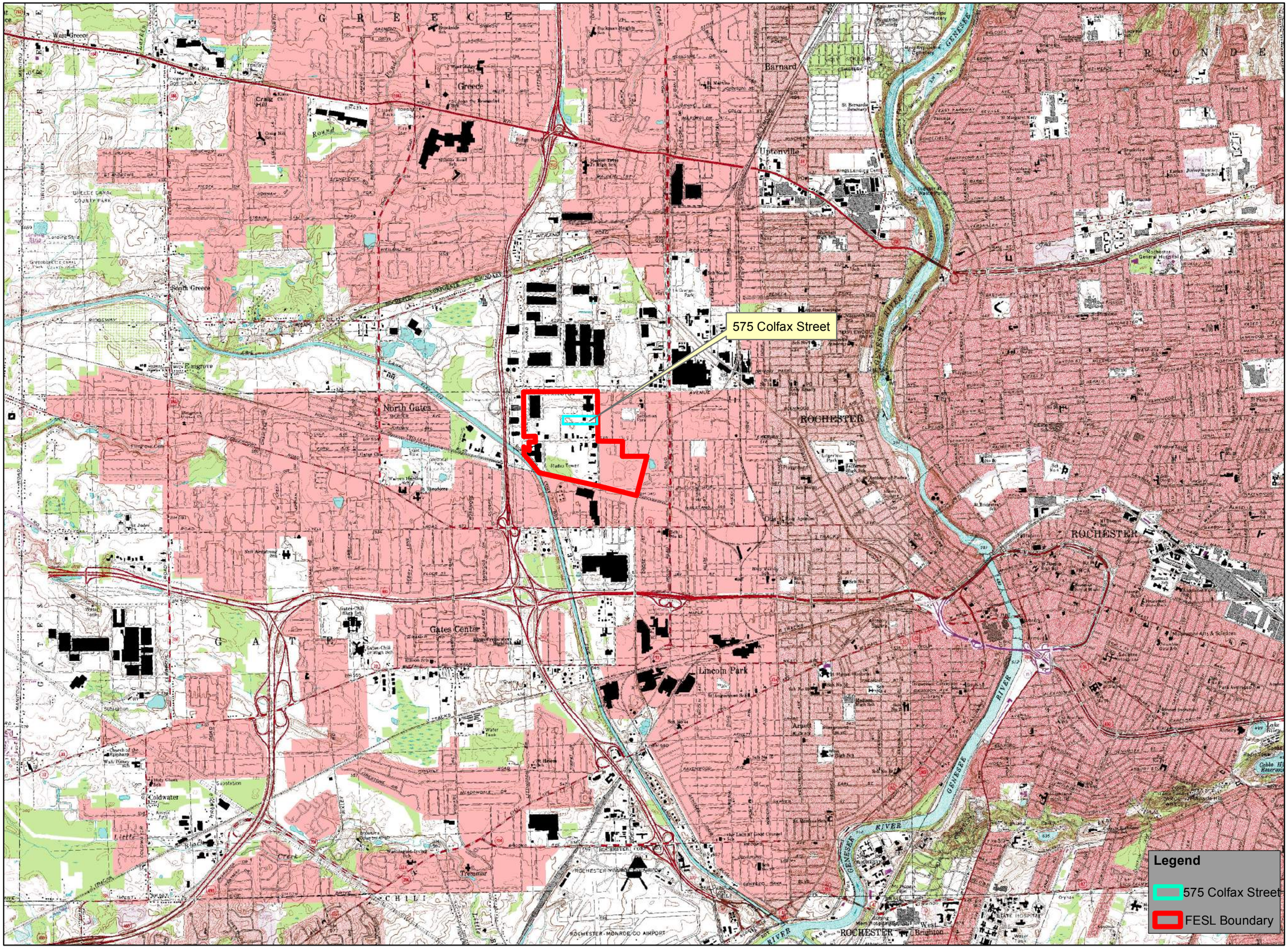
Figures



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CITY OF ROCHESTER

FORMER EMERSON STREET LANDFILL
ROCHESTER, NEW YORK

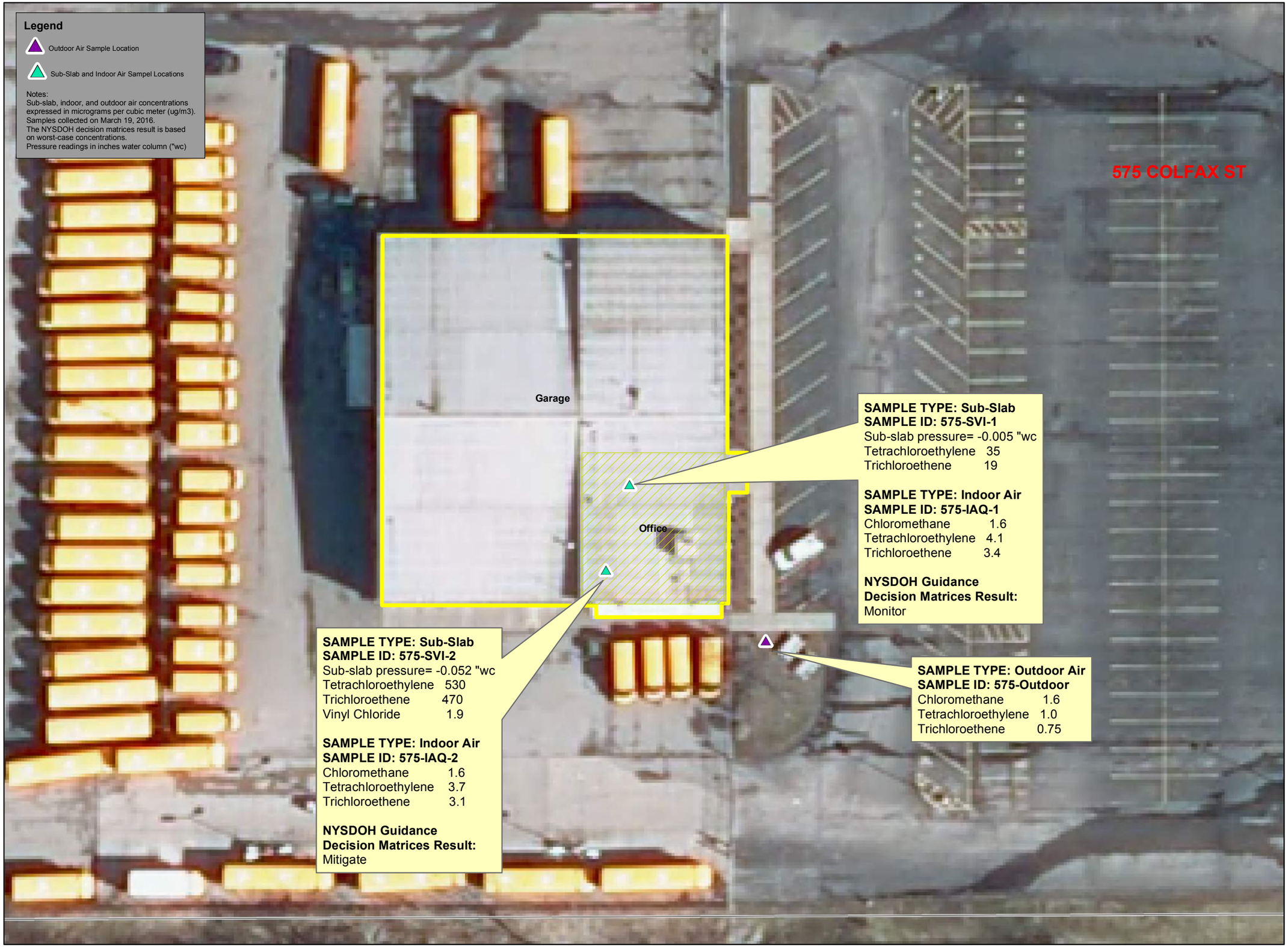
SUB-SLAB DEPRESSURIZATION WORK PLAN
575 COLFAX STREET

PROJECT LOCUS MAP
USGS 7.5 MINUTE TOPO
ROCHESTER WEST

210173

FIGURE 1

Path: \\Projects2\ProjectsNZ-2\Rochester, City\210173 FESL\Drawings\SVI Testing\575 Colfax St\575 Colfax Street SSDS WP FIGURE 1.mxd



Legend

Outdoor Air Sample Location

Sub-Slab and Indoor Air Sampel Locations

Notes:
Sub-slab, indoor, and outdoor air concentrations expressed in micrograms per cubic meter (ug/m3).
Samples collected on March 19, 2016.
The NYSDOH decision matrices result is based on worst-case concentrations.
Pressure readings in inches water column ("wc)

SAMPLE TYPE: Sub-Slab
SAMPLE ID: 575-SVI-1
Sub-slab pressure= -0.005 "wc
Tetrachloroethylene 35
Trichloroethene 19

SAMPLE TYPE: Indoor Air
SAMPLE ID: 575-IAQ-1
Chloromethane 1.6
Tetrachloroethylene 4.1
Trichloroethene 3.4

NYSDOH Guidance Decision Matrices Result:
Monitor

SAMPLE TYPE: Sub-Slab
SAMPLE ID: 575-SVI-2
Sub-slab pressure= -0.052 "wc
Tetrachloroethylene 530
Trichloroethene 470
Vinyl Chloride 1.9

SAMPLE TYPE: Indoor Air
SAMPLE ID: 575-IAQ-2
Chloromethane 1.6
Tetrachloroethylene 3.7
Trichloroethene 3.1

NYSDOH Guidance Decision Matrices Result:
Mitigate

SAMPLE TYPE: Outdoor Air
SAMPLE ID: 575-Outdoor
Chloromethane 1.6
Tetrachloroethylene 1.0
Trichloroethene 0.75

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CITY OF ROCHESTER

FORMER EMERSON STREET LANDFILL ROCHESTER, NEW YORK

SUB-SLAB DEPRESSURIZATION SYSTEM WORK PLAN 575 COLFAX STREET

SOIL VAPOR INTRUSION SAMPLING RESULTS

N W E S

0 30 Feet
1 inch = 30 feet

210173

FIGURE 2

Path: \\Projects2\ProjectsNZ-2\Rochester, City\210173 FESL\Drawings\SVI Testing\575 Colfax St\575 Colfax Street SSDS WP FIGURE 2.mxd

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CITY OF ROCHESTER

FORMER EMERSON STREET LANDFILL ROCHESTER, NEW YORK

SUB-SLAB DEPRESSURIZATION SYSTEM WORK PLAN 575 COLFAX STREET

SUB-SLAB DEPRESSURIZATION SYSTEM LAYOUT SHOWING FAN LOCATION

575 COLFAX STREET

N W E S

0 30 Feet

1 inch = 30 feet

210173

FIGURE 3

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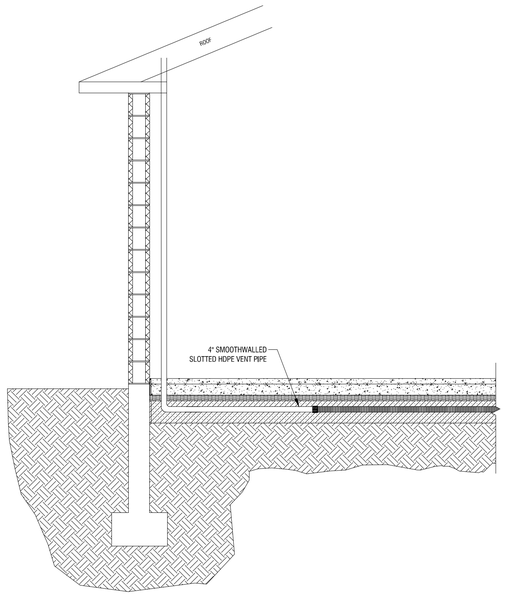
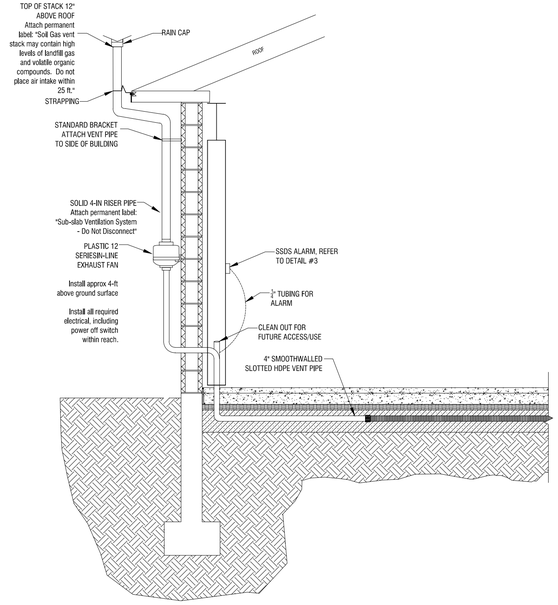


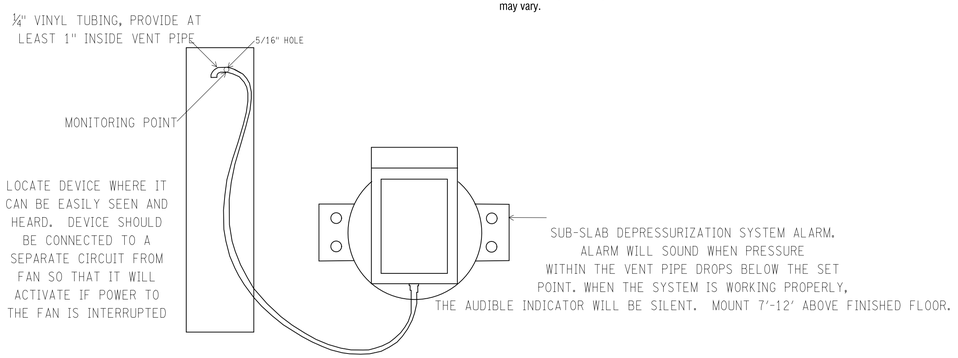
1 EXISTING CONDITIONS
N.T.S

NOTE: Building materials and construction are for system depiction only - actual conditions may vary.



2 PROPOSED SSDS DETAIL
N.T.S

NOTE: Building materials and construction are for system depiction only - actual conditions may vary.



NOTES:

1. PRESSURE SET POINT: -0.25 INCHES WC.
2. PROVIDE ALARM COMPANY LABEL AND CONTACT INFORMATION.

3 SUBSLAB DEPRESSURIZATION SYSTEM ALARM DETAIL
N.T.S

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PROJECT/CLIENT
FORMER EMERSON STREET LANDFILL
575 COLFAX STREET
ROCHESTER, NEW YORK

DRAWING TITLE
SUB-SLAB DEPRESSURIZATION SYSTEM DETAILS

DESIGNED BY: DPN
DRAWN BY: DRP
REVIEWED BY: DPN
ISSUED FOR: FINAL
DATE: NOVEMBER 2016

PROJECT/DRAWING NUMBER
210173

FIGURE 4

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

Appendix 1

Health & Safety Plan

LABELLA Associates, P.C.

Engineering
Architecture
Environmental

Site Health and Safety Plan

Location:

Former Emerson Street Landfill
Rochester, New York 14606

Prepared For:

City of Rochester
Division of Environmental Quality
Room 300-B
Rochester, New York 14614

LaBella Project No. 210173

March 2010
Revised June 2010

Site Health and Safety Plan

Location:

Former Emerson Street Landfill
Rochester, New York 14606

Prepared For:

City of Rochester
Division of Environmental Quality
Room 300-B
Rochester, New York 14614

LaBella Project No. 210173

March 2010
Revised June 2010

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

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SITE HEALTH AND SAFETY PLAN

Project Title:	Former Emerson Street Landfill
Project Number:	210173
Project Location (Site):	Emerson Street, Rochester, New York
Environmental Director:	Gregory Senecal, CHMM
Project Manager:	Dan Noll, P.E.
Plan Review Date:	_____
Plan Approval Date:	_____
Plan Approved By:	_____ Mr. Richard Rote, CIH
Site Safety Supervisor:	To Be Determined
Site Contact:	To Be Determined
Safety Director:	Rick Rote, CIH
Proposed Date(s) of Field Activities:	To Be Determined
Site Conditions:	Slightly sloping, encompassing approximately 250 acres
Site Environmental Information Provided By:	Prior Environmental Reports by LaBella Associates, P.C. and various other consultants (refer to Work Plan)
Air Monitoring Provided By:	To Be Determined
Site Control Provided By:	Individual Property Owners

EMERGENCY CONTACTS

	Name	Phone Number
Ambulance:	As Per Emergency Service	911
Hospital Emergency:	Unity Health Systems	585-723-7070
Poison Control Center:	Finger Lakes Poison Control	585-273-4621
Police (local, state):	Monroe County Sheriff	911
Fire Department:	Rochester Fire Department	911
Site Contact:	To Be Determined	
Agency Contact:	NYSDEC – Todd Caffoe, P.E. NYSDOH – Katie Comerford Finger Lakes Poison Control MCDOH – Joseph Albert	585-226-5357 585-423-8067 1-800-222-1222 585-753-5904
Environmental Director:	Greg Senecal, CHMM	Direct: 585-295-6243 Cell: 585-752-6480 Home: 585-323-2142
Project Manager:	Dan Noll, P.E.	Direct: 585-295-611 Cell: 585-301-8458
Site Safety Supervisor:	To Be Determined	
LaBella Safety Director	Rick Rote, CIH	Direct: 585-295-6241

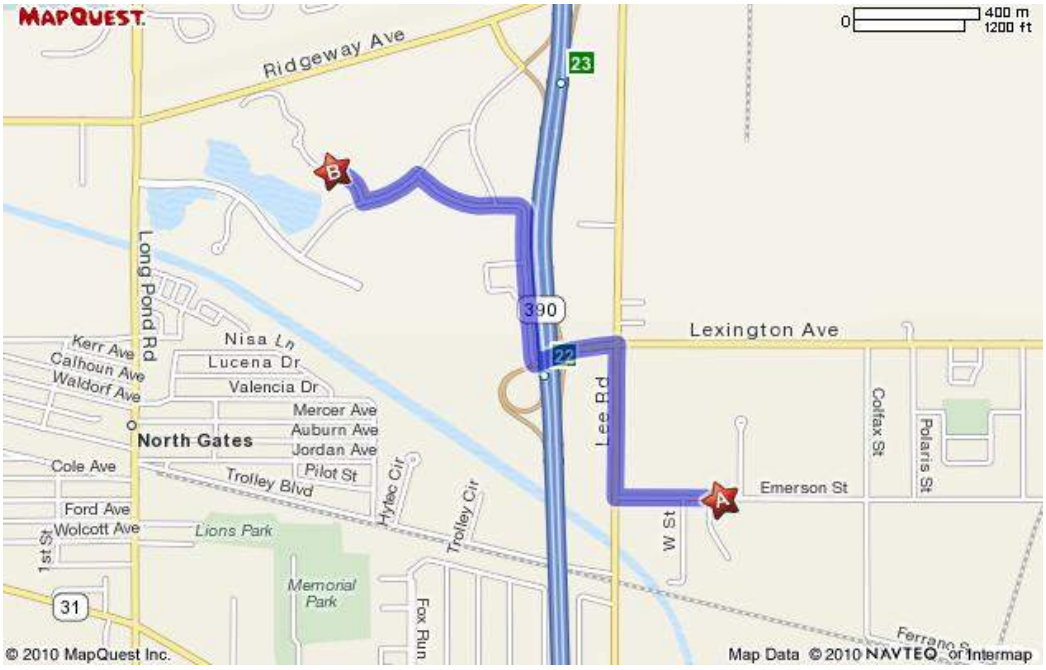
MAP AND DIRECTIONS TO THE MEDICAL FACILITY - UNITY HEALTH SYSTEMS

Total Time: 4 minutes
Total Distance: 1.67 miles

Start: 1740 Emerson St, Rochester, NY, 14606-3122

1. Start out going WEST on EMERSON ST toward VANGUARD PKWY.
2. Turn RIGHT onto LEE RD/CR-154.
3. Turn LEFT onto LEXINGTON AVE.
4. Turn RIGHT onto BELLWOOD DR.
5. Stay STRAIGHT to go onto PINEWILD DR.
6. Turn LEFT onto LONGLEAF BLVD.
7. Turn RIGHT onto INDIGO CREEK DR.
8. 125 INDIGO CREEK DR is on the LEFT.

End: 125 Indigo Creek Drive, Rochester, NY 14626



1.0 Introduction

The purpose of this Health and Safety Plan (HASP) it to provide guidelines for responding to potential health and safety issues that may be encountered during the Soil Vapor Intrusion (SVI) assessment and mitigation at the former Emerson Street Landfill (FESL) located on Emerson Street in the City of Rochester, Monroe County, New York. This HASP only reflects the policies of LaBella Associates P.C. HASPs specific to individual facilities located on the FESL may contain policies that differ from those contained herein, and should be referenced prior to responding to health and safety issues at those respective facilities. The requirements of this HASP are applicable to Labelle personnel at the work site. It is the responsibility of each sub-consultant and sub-contractor to follow their own companies HASP and to adhere to any requirements/policies of individual facilities. This document's project specifications should be consulted for guidance in preventing and quickly abating any threat to human safety or the environment. The provisions of the HASP were developed in general accordance with 29 CFR 1910 and 29 CFR 1926 and do not replace or supersede any regulatory requirements of the USEPA, NYSDEC, OSHA or and other regulatory body.

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 . It is the responsibility of LaBella employees to follow the requirements of this HASP, or HASPs specific to individual facilities, and all applicable company safety procedures.

3.0 Activities Covered

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

- Building Inventory Assessments
- Management of SVI assessments and mitigation activities
- Environmental Monitoring
- Collection of samples

4.0 Work Area Access and Site Control

Based on the nature of the project, site control will likely be the responsibility of the individual property owners; however, LaBella will have primary responsibility for maintaining a safe work area for all activities conducted by LaBella personnel. Such work area controls will consist of:

- Drilling (Geoprobe/Rotary) – Orange cones to establish at least a 10-foot by 10-foot work area
- Sub-slab soil vapor installations – cones or caution tape will be used to establish a minimum 5-foot by 5-foot work area during installations. If deemed necessary, additional precautions on sub-slab installations could include enclosures for venting vapors/methane.

5.0 Potential Health and Safety Hazards

This section lists some potential health and safety hazards that project personnel may encounter at the FESL and associated facilities, 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. In addition, each person entering a facility will be responsible for establishing contact with a facility representative and request any applicable safety training/orientation for that facility. In the event such training/orientation is not a requirement at that facility, the LaBella personnel will request information on specific hazards to be aware of at that facility.

5.1 Hazards Due to Heavy Machinery and Equipment

Potential Hazard:
Heavy machinery including trucks, excavators, backhoes, drill rigs, manufacturing equipment and processes, 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 and manufacturing equipment.

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. Do not wear loose clothing that could be caught by moving parts. 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. All excavations will be backfilled by the end of each day. Additionally, no test pit will be left unattended during the day.

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 or 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:

Volatile organic vapors from petroleum products, chlorinated solvents or other chemicals may be encountered during excavation and SVI activities at the project work site. Inhalation of high concentrations of organic vapors can cause headache, stupor, drowsiness, confusion and other health effects. Skin contact can cause irritation, chemical burn, or dermatitis.

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 and to the Modified CAMP in Appendix 7) 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 is 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.

5.6 Potential Exposure to Asbestos

Potential Hazards:

During ground intrusive activities (e.g., test pitting or drilling) soil containing asbestos may be encountered. Asbestos is friable when dry and can be inhaled when exposed to air.

Protective Action:

The presence of asbestos can be identified through visual observation of a white magnesium silicate material. If encountered, work should be halted and a sample of the suspected asbestos

should be collected and placed in a plastic sealable bag. This sample should be sent to the asbestos laboratory at LaBella Associates for analysis.

5.7 Potential Explosive Atmospheres

Potential Hazards:
During ground intrusive activities (e.g., drilling or sub-slab monitoring point installations), methane rich vapors within the explosive range could be encountered and pose an explosion risk once encountered.

Protective Action:
For all subsurface work that is conducted within an enclosed space (e.g., a building), the work area environment will be monitored for methane concentrations. In the event that methane levels are measured at 10% of the lower explosive limit (LEL), meaning methane levels of 0.5% (i.e., methane LEL is 5%) then the work should be ceased until levels decrease to below 0.5%. If methane levels do not decrease, the work shall be discontinued until appropriate engineering measures are put in place (e.g., enclosure with adequate venting).

5.8 Potential Exposure to Radiation

Potential Hazards:
During ground intrusive activities (e.g., test pitting or drilling), radioactive material could be encountered and pose an exposure risk to humans once encountered.

Protective Action:
Each test pit, soil sample, or other soil from the subsurface should initially be screened with the Ludlum meter to check the level of radiation on the soil as compared to the Site background level of radiation. Should the level of radiation on the soil sample exceed 2 times the Site background level, then work should be halted at the specified location and Mr. Rick Rote of LaBella Associates, P.C. should be contacted immediately (see page ii Emergency Contacts).

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 procedures described in "NYSDOH Generic CAMP", included as Appendix 1A to the NYSDEC DER-10 *Technical Guidance for Site Investigation and Remediation* dated November 2009. Please refer to the NYSDOH Generic CAMP for further details on air monitoring at the Site.

The Air Monitor will utilize a photoionization Detector (PID) to screen the ambient air in the work 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 or more often using a PID, and the DustTrak meter.

If sustained PID readings of greater than 25 ppm are recorded in the breathing zone, then 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-hours of use or more frequently, if necessary. If PID readings are sustained, in the work area, at levels above 25 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 dust concentrations exceed the upwind concentration by 150 µg/m^3 (0.15 mg/m^3) consistently for a 10 minute period within the work area or at the downwind location, then LaBella personnel may not re-enter the work area until dust concentrations in the work area decrease below 150 µg/m^3 (0.15 mg/m^3), which may be accomplished by the construction manager implementing dust control or suppression measures.

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 and wait at the assigned 'safe area'. 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 fieldwork must be 40-hour OSHA HAZWOPER trained with current 8-hour refresher certification.

Table 1
Exposure Limits and Recognition Qualities

Compound	PEL-TWA (ppm)(b)(d)	TLV-TWA (ppm)(c)(d)	STEL	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	0.2	0.2	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	0.096	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
Ethylbenzene	100	100	NA	1	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
Isopropylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methane	NA	NA	NA	5	15	NA	NA	NA	12.98
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
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	Almond	NA	NA
Cadmium	0.2	0.5	NA	NA	NA	NA	NA	NA	NA
Chromium	1	0.5	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	Odorless	NA	NA
Selenium	0.2	0.02	NA	NA	NA	Unknown	NA	NA	NA
Other									
Asbestos	0.1 (f/cc)	NA	1.0 (f/cc)	NA	NA	NA	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) mmediately 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

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 <u>ground intrusive</u> 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.

June 20, 2000

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

Appendix 3

Centek Laboratory Report

Centek Laboratories, LLC

Date: *04-Apr-16*

CLIENT:	LaBella Associates, P.C.	**Client Sample ID:**	575 Outdoor
Lab Order:	C1603074	**Tag Number:**	223,388
Project:	575 Colfax FESL SVI	**Collection Date:**	3/19/2016
Lab ID:	C1603074-001A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.25UG/M3 CT-TCE-VC		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	< 0.82	0.82		ug/m3	1	4/1/2016 2:22:00 AM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	4/1/2016 2:22:00 AM
1,1-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 2:22:00 AM
Chloroethane	< 0.40	0.40		ug/m3	1	4/1/2016 2:22:00 AM
Chloromethane	1.6	0.31		ug/m3	1	4/1/2016 2:22:00 AM
cis-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 2:22:00 AM
Tetrachloroethylene	1.0	1.0		ug/m3	1	4/1/2016 2:22:00 AM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 2:22:00 AM
Trichloroethene	0.75	0.21		ug/m3	1	4/1/2016 2:22:00 AM
Vinyl chloride	< 0.10	0.10		ug/m3	1	4/1/2016 2:22:00 AM

Qualifiers:

**	Reporting Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *04-Apr-16*

CLIENT:	LaBella Associates, P.C.	**Client Sample ID:**	575-SVI-1
Lab Order:	C1603074	**Tag Number:**	141,258
Project:	575 Colfax FESL SVI	**Collection Date:**	3/19/2016
Lab ID:	C1603074-002A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	< 0.82	0.82		ug/m3	1	4/1/2016 2:58:00 PM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	4/1/2016 2:58:00 PM
1,1-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 2:58:00 PM
Chloroethane	< 0.40	0.40		ug/m3	1	4/1/2016 2:58:00 PM
Chloromethane	< 0.31	0.31		ug/m3	1	4/1/2016 2:58:00 PM
cis-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 2:58:00 PM
Tetrachloroethylene	35	10		ug/m3	10	4/2/2016 2:50:00 PM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 2:58:00 PM
Trichloroethene	19	8.1		ug/m3	10	4/2/2016 2:50:00 PM
Vinyl chloride	< 0.38	0.38		ug/m3	1	4/1/2016 2:58:00 PM

Qualifiers:

**	Reporting Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *04-Apr-16*

CLIENT:	LaBella Associates, P.C.	**Client Sample ID:**	575-IAQ-1
Lab Order:	C1603074	**Tag Number:**	128,296
Project:	575 Colfax FESL SVI	**Collection Date:**	3/19/2016
Lab ID:	C1603074-003A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.25UG/M3 CT-TCE-VC		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	< 0.82	0.82		ug/m3	1	4/1/2016 3:00:00 AM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	4/1/2016 3:00:00 AM
1,1-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 3:00:00 AM
Chloroethane	< 0.40	0.40		ug/m3	1	4/1/2016 3:00:00 AM
Chloromethane	1.6	0.31		ug/m3	1	4/1/2016 3:00:00 AM
cis-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 3:00:00 AM
Tetrachloroethylene	4.1	1.0		ug/m3	1	4/1/2016 3:00:00 AM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 3:00:00 AM
Trichloroethene	3.4	0.21		ug/m3	1	4/1/2016 3:00:00 AM
Vinyl chloride	< 0.10	0.10		ug/m3	1	4/1/2016 3:00:00 AM

Qualifiers:

**	Reporting Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *04-Apr-16*

CLIENT:	LaBella Associates, P.C.	**Client Sample ID:**	575-SVI-2
Lab Order:	C1603074	**Tag Number:**	136,249
Project:	575 Colfax FESL SVI	**Collection Date:**	3/19/2016
Lab ID:	C1603074-004A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	< 0.82	0.82		ug/m3	1	4/1/2016 3:39:00 PM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	4/1/2016 3:39:00 PM
1,1-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 3:39:00 PM
Chloroethane	< 0.40	0.40		ug/m3	1	4/1/2016 3:39:00 PM
Chloromethane	< 0.31	0.31		ug/m3	1	4/1/2016 3:39:00 PM
cis-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 3:39:00 PM
Tetrachloroethylene	530	95		ug/m3	90	4/2/2016 3:27:00 PM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 3:39:00 PM
Trichloroethene	470	75		ug/m3	90	4/2/2016 3:27:00 PM
Vinyl chloride	1.9	0.38		ug/m3	1	4/1/2016 3:39:00 PM

Qualifiers:

**	Reporting Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *04-Apr-16*

CLIENT:	LaBella Associates, P.C.	**Client Sample ID:**	575-IAQ-2
Lab Order:	C1603074	**Tag Number:**	1195,187
Project:	575 Colfax FESL SVI	**Collection Date:**	3/19/2016
Lab ID:	C1603074-005A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.25UG/M3 CT-TCE-VC		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	< 0.82	0.82		ug/m3	1	4/1/2016 3:39:00 AM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	4/1/2016 3:39:00 AM
1,1-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 3:39:00 AM
Chloroethane	< 0.40	0.40		ug/m3	1	4/1/2016 3:39:00 AM
Chloromethane	1.6	0.31		ug/m3	1	4/1/2016 3:39:00 AM
cis-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 3:39:00 AM
Tetrachloroethylene	3.7	1.0		ug/m3	1	4/1/2016 3:39:00 AM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 3:39:00 AM
Trichloroethene	3.1	0.21		ug/m3	1	4/1/2016 3:39:00 AM
Vinyl chloride	< 0.10	0.10		ug/m3	1	4/1/2016 3:39:00 AM

Qualifiers:

**	Reporting Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		