Corrective Action Plan

Congress and Main Redevelopment Project
10 Maiden Lane
10 and 12 Congress Street
83-87, 89, and 99 North Main Street
St. Albans, Vermont 05478

44°48'46.70" N, 73°4'55.93'' W
DEC Site #2018-4811

Revised May 8, 2019

Prepared For:
City of St. Albans
100 North Main Street
St. Albans, Vermont 05478

LE·Environmental

21 North Main Street
Waterbury, Vermont 05676
(802) 917-2001
www.leenv.net

LEE #18-112

Contents

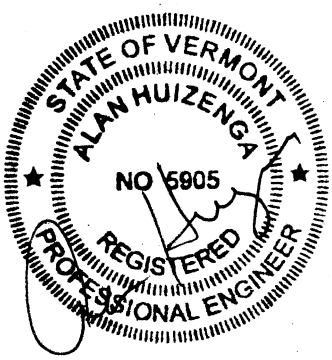
1.0 PROFESSIONAL ENGINEER'S REVIEW 3
2.0 EXECUTIVE SUMMARY 4
3.0 PUBLIC NOTICE 4
4.0 PERFORMANCE STANDARDS 6
5.0 REMEDIAL CONSTRUCTION PLAN 6
6.0 WASTE MANAGEMENT PLAN 8
7.0 IMPLEMENTATION SCHEDULE 8
8.0 CORRECTIVE ACTION MAINTENANCE PLAN 9
9.0 INSTITUTIONAL CONTROL PLAN 9
10.0 REDEVELOPMENT AND REUSE PLAN 9
11.0 QUALITY ASSURANCE AND QUALITY CONTROL PLAN 9
12.0 COST ESTIMATE 10
13.0 UPDATED MAPS 10
14.0 CONTAMINATION CONCENTRATION SUMMARIES 10
15.0 CONTRACTOR LIST 10

Appendices:

A. Maps and Plans
Site Location Map
Existing Conditions and Demolition Plan
Corrective Action Plan
SSD System 12 Congress St. Plan
Typical Passive System Plan
B. Cost Estimate
C. Phase II ESA Summary

1.0 PROFESSIONAL ENGINEER'S REVIEW

I have reviewed the Corrective Action Plan for the Congress and Main Redevelopment Project, located in St. Albans, Vermont, State of Vermont Department of Environmental Conservation Sites Management Section #2018-4811, prepared by LE Environmental LLC revised on May 8, 2019.



2.0 EXECUTIVE SUMMARY

This is a Corrective Action Plan (CAP) for the Congress and Main Redevelopment Project, located at 10 Maiden Lane, 10 and 12 Congress Street, 83-87, 89, and 99 North Main Street in the City of St. Albans, Vermont (Site). A Site location map and an existing conditions map are included in Appendix A.

The Site consists of six separate parcels, totaling approximately 1-acre of land, with five buildings, in downtown St. Albans City. The surrounding area includes residential/institutional/commercial properties. The Site is entirely developed with structures, parking lots, and a retaining wall. There are five separate structures located on the Site.

Current redevelopment plans for the Site include the demolition of four buildings (85-87 North Main, 89-91 North Main, 10 Congress, and 10 Maiden Lane), and construction of two new buildings with retail and residential uses. The building at 12 Congress Street will remain as-is during the redevelopment.

Environmental investigations conducted on the Site have revealed the presence of polycyclic aromatic hydrocarbons (PAHs), lead, and arsenic above statewide urban background in soils on the Site, which is consistent with urban fill or "'development soils" typically found in urban downtowns.

Elevated levels of naphthalene and acrolein were reported in soil vapor samples collected throughout the Site. Concentrations of benzene, acrolein, chloroform, 1,2-dichloroethane, and ethyl acetate were reported above the residential indoor air screening thresholds in the indoor air samples collected from 12 Congress Street. The benzene concentrations were less than the ambient air concentrations, indicating the source for benzene is likely the outdoor air. The other contaminants identified may be attributed to vapor intrusion since they were comparable to the sub-slab concentrations.

An Evaluation of Corrective Action Alternatives (ECAA) document prepared in January 2019 recommended partial contaminated soil removal and installation of a minimum 18" clean cap across the Site, and installation of an active sub-slab depressurization system at 12 Congress Street and passive sub-slab depressurizations systems in the two new buildings.

3.0 PUBLIC NOTICE

There are no known current impacted third parties at this time. Interested third parties for this Site include the City of St. Albans, and the State of Vermont Department of Environmental Conservation.

The following table summarized the interested third parties for this site along with their contact information.

Interested Third Party	Name and Address	Telephone Number
City of St. Albans	City of St. Albans 100 North Main Street St. Albans, VT 05478	(802) 524-1500
State of Vermont	Kristi Herzer, Brownfields Response Program Waste Management and Prevention Division 1 National Life Drive, Davis 1 Montpelier, VT 05620-3704	(802) 461-6918

The following is a table summarizing the adjoining property owners. The existing conditions map in Appendix A depicts the locations of these properties.

Property Address	Tax Map ID	Property Owner	Owner's Address/ Contact information
80-84 North Main St	23063080	John D. Robertson	US Consulate Guangzou, Unit 4090, Box 2179DPO, AP 96521-2179 or 4171 AIT Tapei Place APT. 24 Dulles, VA 20189 wbtf@hotmail.com
86 North Main St	23063086	Lili A Gamache	98 Fairfield Hill Road St. Albans, VT 05478 802-309-9993, lgbabycake@gmail.com
92-94 North Main St	23063086	Hannah Lyford	1927 Bradley Hill Road Milton, VT 05468
100 North Main St	23063100	City of St. Albans	PO Box 867 100 North Main Street (802) 524-1500
104 North Main St	23063104	Celey P. Gamache Family Trust	85 High Street St. Albans, VT 05478
81 North Main St	14063081	Victoria I. Isham	100 Church Road St. Albans, VT 05478
77-79 North Main St	14063077	James L. Levy	79 North Main Street St. Albans, VT 05478
25 Bank St	14005025	Telephone Operating Company of Vermont, LLC	Consolidated Communications PO Box 182558 Columbus, OH 43218-2558 207-535-4189 norwood.cohan-smith@consolidated.com
29-31 Bank St	14005029	Leahy Properties, LLC	C/O David Leahy 3331 Imperial Manor Way Mulberry, FL 33860
11 Maiden Lane	14056015	St. Albans Free Library	11 Maiden Lane St. Albans, VT 05478
13 Maiden Lane	14056013	Connor Brothers Rail City, LLC	1100 US Route 2 Berlin, VT 05602
109 North Main St	11063109	North Main Street, LLC	218 Maquam Shore Road Swanton, VT 05488
17 Congress St	11022017	Steven B. North	12 Grandview Drive, #12 South Burlington, VT 05403
29-31 Congress St	11022025	First Baptist Church	29 Congress Street St. Albans, VT 05478

4.0 PERFORMANCE STANDARDS

The objectives to be met during this corrective action include:

A. Isolation of PAH, arsenic, and lead contaminated soil from human exposure during construction and during residential and commercial use of the property.
B. Decrease risk of VOCs in soil gas exposure across the Site.

Clean soil/concrete/asphalt caps will prevent a completed exposure pathway for the contaminated soil. New buildings will have passive sub-slab depressurization systems installed, and the existing building at 12 Congress Street will be retrofitted with an active sub-slab depressurization system to eliminate the completed vapor pathway. Periodic inspections will need to take place to make sure the structures remain intact and that the system is operational.

Approval of this CAP by the Vermont Department of Environmental Conservation will be required prior to construction. A City Zoning permit will likely be required for the proposed earthwork.

5.0 REMEDIAL CONSTRUCTION PLAN

A portion of contaminated soil will be removed, transported, and disposed of off-Site at an approved facility. The contaminated soil removal would be necessary to accommodate the redevelopment. A clean cap will be placed throughout the Site, which will consist of either a minimum of 18" of clean soil, or a minimum of 6" of concrete or asphalt (foundations, sidewalks, parking lots, and driveways). The caps would isolate the contaminated soil from exposure. Clean soil for capping would be imported from an off-Site source.

Preliminary calculations indicate that approximately 6,500 cubic yards, or 9,750 tons, will be removed from the Site to accommodate the redevelopment and the clean cap. Characterization soil testing will be needed to fulfill disposal facility acceptance requirements. The contaminated soils will be properly transported and disposed of in accordance with state and federal regulations. The closed-in-place UST at 10 Maiden Lane will be removed from the Site and disposed of at an approved facility as well.

Clean fill will be imported to the Site. The clean soil source will be tested for the presence of contaminants to ensure it meets applicable regulatory standards. A layer of geotextile fabric will be placed under the clean cap, to serve as a warning barrier in the event of soil erosion or unauthorized excavations.

An active sub-slab depressurization system will be installed at 12 Congress Street, similar to a radon gas system. Four locations in the basement were selected for

installation of "drop points." These drop points will consists of a 4" hole, cored through the slab, and the sub-slab material the 4" hole will be excavated to create a void space approximately 6-8" deep. These sub-slab pits will act as soil vapor extraction points and will aide in achieving depressurization across the basement. Each of the drop points will be fitted with a 4" PVC riser and sealed. A detail of the drop point is shown on Drawing 2 in Appendix A. The approximate locations of the drop point locations are depicted in the Drawing 1.

The PVC risers will extend directly upwards to the basement ceiling. Each of the vertical pipes will manifold into 1 of 2 horizontal piping runs along the basement ceiling. All of the horizontal PVC piping will be pitched downward back toward the drop points, which allows for draining of condensate back to the subsurface.

Two high-vacuum radon fans (RadonAway GP-501) are believed to be sufficient to effectively depressurize the basement slab. The fans will be installed on the exterior of the building. A reducing Fernco fitting will be placed on both sides of the fans, to accommodate the 4" PVC on the influent and effluent sides. The exhaust pipes will extend to a minimum of 12" above the roof and a minimum of 10' from any openings into the conditioned spaces of building. The exhaust pipes will terminate with a tee-type vent cap, to minimize precipitation entering the system. Electricity will be supplied to the fan via a waterproof junction box, with conduit routed to the nearest power panel. The fans will be installed and wired by a licensed electrical contractor. The fans exhaust systems will also be equipped with a condensate bypass.

An influent sampling port will be installed along each of the horizontal piping runs, and 3/16" I.D. teflon-lined tubing will be attached to the sampling ports. The tubing will be sealed with an appropriately sized vacuum cap. This sampling point will be used to check system pressure, and for the collection of influent soil gas samples for laboratory analysis. A U-Tube manometer will be placed on both of the systems to allow for visual confirmation that the fans are operating.

Once the system is operating, testing will be performed to ensure a pressure differential is created. The preferred relative pressure differential for this system will be 0.008 inches of water between the indoor air space and the sub-slab soils. The data collected will include induced vacuum, air flow rate, temperature, and differential pressure between the exterior, interior, and sub-slab piping. Permanent vapor pins will be placed in the basement, at 4 locations, for induced vacuum measurements. An environmental professional will perform the induced vacuum checks twice in the first year of operation. If a sufficient vacuum is observed during both monitoring events, the system will be deemed successful. If the installed system does not create adequate sub-slab depressurization, the fan will be changed, or additional drop points will be installed.

Additionally, a passive sub-slab depressurization system will be installed in the two newly constructed buildings. The systems will be constructed with crushed stone, a 15-mil membrane, foam insulation, and PVC piping. The exact piping configuration would be identified the final architectural plans so as not to interfere with planned building uses. Cross sections of the systems are included in Appendix A.

This corrective action will provide overall protection of human health and the environment, and will serve as both a short-term and a long-term remedy to the contamination.

6.0 WASTE MANAGEMENT PLAN

The cleanup will involve removal and disposal of approximately 9,750 tons of contaminated soil. This soil will need to be disposed of at a licensed facility. Two facilities that accept PAH contaminated soil include ESMI in Louden, New Hampshire, and the Waste USA Landfill in Coventry, Vermont. Upon CAP approval, characterization samples of the soil will be collected and tested according to the selected disposal facility's characterization criteria. Costs for this testing are included in the cleanup cost estimate.

Analysis of extractable lead and mercury via the toxicity leaching procedure (TCLP) performed during Phase II ESA sampling indicated the metal concentrations found in the soil would not render the soil hazardous waste.

Generation of dust from the contaminated area will be addressed as follows to minimize the inhalation pathway during construction. All excavated surfaces will be wetted as needed to minimize dust. Calcium chloride may also be used to control dust on exposed excavation surfaces. All excavated contaminated soil will be placed on and covered with 6-mil polyethylene sheeting during short-term, temporary staging. No contaminated soil will be stockpiled long-term. The soils will be wetted before being direct loaded onto the transport vehicles and covered. Visible emissions of dust from the site or from transport vehicles will not be permitted.

7.0 IMPLEMENTATION SCHEDULE

Work can begin upon approval of this CAP by the DEC, and will occur concurrent with the redevelopment of the property, which is scheduled for the 2019 construction season. The following milestones are anticipated:

- Building Demolition: May-July 2019
- Excavation Begins: June 2019
- SSD System Installation and Start-up: September 2019
- Site Work and Building Completion: November 2020

8.0 CORRECTIVE ACTION MAINTENANCE PLAN

Periodic inspections will be conducted to verify that the remedial structures remain intact. This includes mowing soil caps areas, inspecting sidewalks and parking areas for cracks, and repairing any erosion that may occur. The active SSD system at 12 Congress Street will need to be inspected periodically to ensure the fans are operable. The City of St. Albans will check the U-Tube manometers once a month to make sure the fans are operating correctly. The cap area inspection and fan checks will be summarized in an annual operation and maintenance report.

9.0 INSTITUTIONAL CONTROL PLAN

The property owner has enrolled the properties in BRELLA. The primary mechanism for establishing an institutional control plan on the properties is through a Brownfields certificate of completion. A certificate of completion with a land use restriction will be recorded in the City of St. Albans land records. The certificate of completion will identify the location of the soil cap and the SSD system at 12 Congress Street. These controls will require monitoring and reporting as noted in 8.0.

10.0 REDEVELOPMENT AND REUSE PLAN

Current redevelopment plans for the Site include the demolition of four buildings (85-87 North Main, 89-91 North Main, 10 Congress, and 10 Maiden Lane). A new three-story 25,000 square foot commercial building will be constructed along the entire frontage of North Main Street. The first floor will be 4,400 SF of retail space, and the second and third floors will be 9,600 SF each of office space. A 4-story, 24-unit market rate housing structure will be constructed in the southeast corner of the lot along Maiden Lane, and a 4-story, 30-unit affordable housing structure will be constructed at the corner of Congress Street and Maiden Lane. The new structures will share a firewall and will sit on a foundation that also acts as a retention wall to allow for parking spaces underneath the buildings. The building at 12 Congress Street will remain as a mixed multi-family residential and light commercial structure.

11.0 QUALITY ASSURANCE AND QUALITY CONTROL PLAN

The only QAQC requirements pertain to sampling of soil during disposal characterization testing and clean soil testing. Duplicate soil samples will be obtained during characterization and clean soil testing. A trip blank for VOCs analysis will be carried with the samples and analyzed for the characterization and clean soil testing.

12.0 COST ESTIMATE

Information on current prices for excavation equipment and necessary construction supervision and coordination were used to estimate the cost for the work. This information, contained in Appendix B, indicates that the cost for the corrective action is approximately $1,075,000.

13.0 UPDATED MAPS

The Corrective Action Plan drawing in Appendix A shows the earthwork and system construction needed to achieve the corrective action objectives. Cross section views of the proposed capping zones are included on the Corrective Action Plan drawing.

14.0 CONTAMINATION CONCENTRATION SUMMARIES

Contamination concentration summaries from the Phase II ESA are included in Appendix C. Due to the recalcitrant nature of the primary contaminants (PAHs, arsenic, and lead) in soil, temporal changes in concentrations are not anticipated. The concentrations of naphthalene and acrolein observed at the Site are fairly low, and the SSD systems are designed conservatively to mitigate exposure risks from these contaminants.

15.0 CONTRACTOR LIST

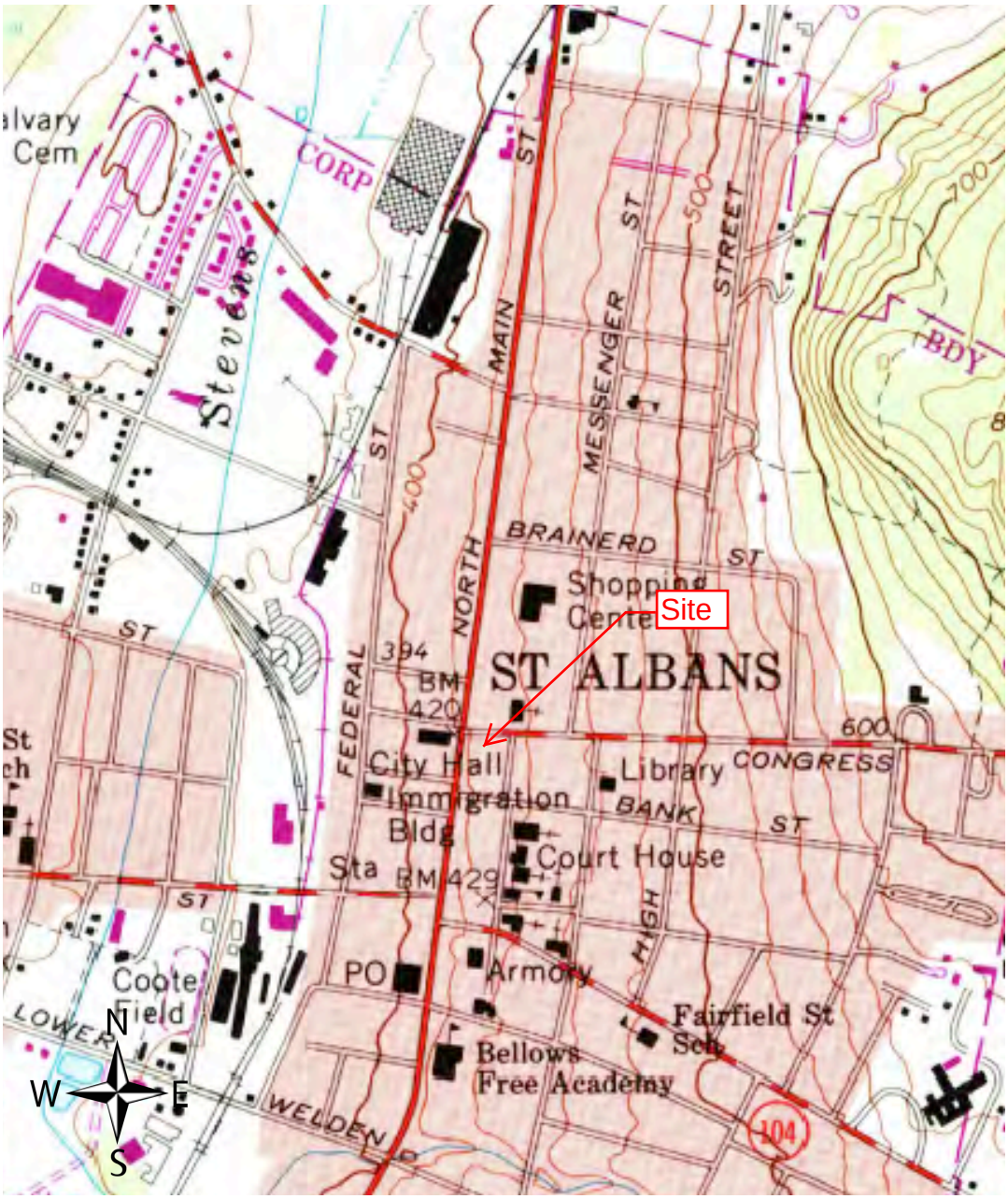
Due to the contaminated soil present on the Site, all earthwork must be performed by a contractor with Hazardous Sites Training according to OSHA, 29 CFR 1910.120. The following is a partial list of contractors who may conduct the cleanup work on the Site:

Excavation and Site Restoration			
Company	*Contact Name*	*Location*	*Phone Number*
Environmental Products and Services	Steve Singer	Williston	(802) 862-1212
Star Construction	Brian Starer	Castleton, VT	(802) 468-8922
National Response Corporation	Kate Keogh	Williston, VT	(802) 488-3901
Laboratory			
Company	*Contact Name*	*Location*	*Phone Number*
Eastern Analytical, Inc	Jenn Jurta	Concord, NH	(603) 228-0525
Endyne, Inc	Mark Fausel	Williston, VT	(802) 879-4333
ConTest	Jim Georgantas	East Longmeadow, MA	(413) 525-2332
Disposal Facility			
Company	*Contact Name*	*Location*	*Phone Number*
Waste USA	Scott Sampson	Coventry, VT	(603) 235-3597
ESMI	Michael Phelps	Loudon, NH	(603) 950-7645

APPENDIX A

MAPS AND PLANS

Site Location Map
Existing Conditions and Demolition Plan
Corrective Action Plan Map
SSD System 12 Congress St. Plan
Typical Passive System Plan

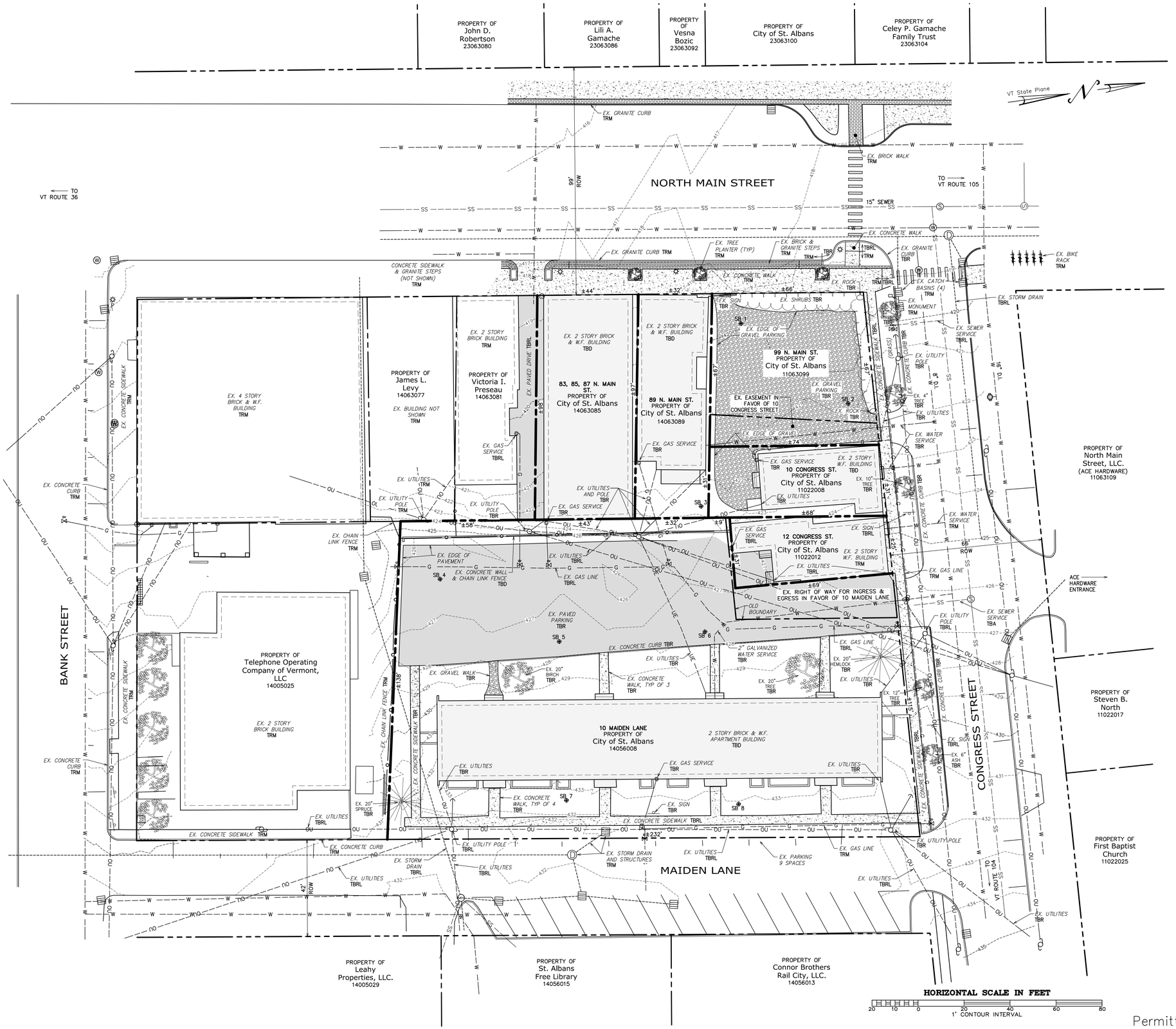


Congress and Main Redevelopment
St. Albans, Vermont

LE·Environmental

Site Location Map

LEE# 18-112
Date: June 18, 2018
Source: USGS



ABBREVIATIONS:

EX	EXISTING
TBA	TO BE ABANDONED
TBD	TO BE DEMOLISHED
TBR	TO BE REMOVED
TBRL	TO BE REPLACED
TRM	TO REMAIN
SB	SOIL BORING

Permitting – COSA October 15, 2018

PROJECT: 18003
DATE: June 29, 2018
DESIGN: PHC
DRAWN: NRB
CHECKED: PHC
APPROVED: PHC

Tel. 802-524-2113
Fax: 802-524-9681
CROSS CONSULTING ENGINEERS, P.C.
103 Fairfax Rd.
St. Albans, Vermont 05478
© COPYRIGHT 2018
Cross Consulting Engineers, P.C.

Existing Conditions And Demolition Plan

City Of St. Albans
St. Albans, VT

Congress & Main Redevelopment

N. Main & Congress St. Albans, VT

CIVIL

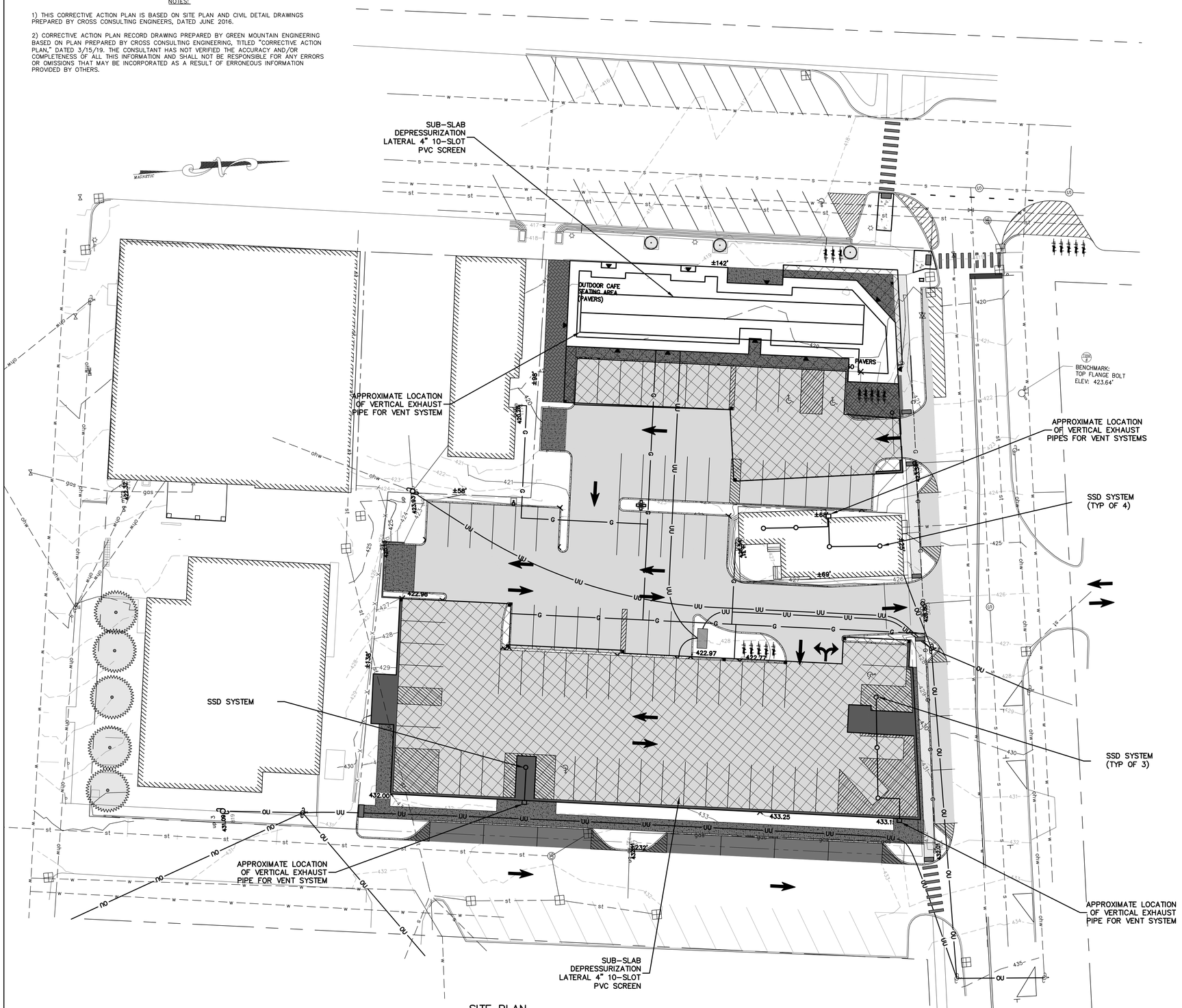
C-2

Q:\2018 Drawings\18003- COSA, Survey, Corner Main & Congress St\Current\C-2 Existing Conditions And Demolition Plan.dwg Plotted: 10/11/2018 3:03:16 PM

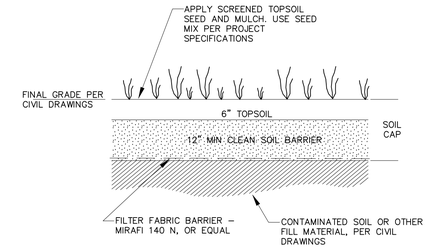
NOTES:

1) THIS CORRECTIVE ACTION PLAN IS BASED ON SITE PLAN AND CIVIL DETAIL DRAWINGS PREPARED BY CROSS CONSULTING ENGINEERS, DATED JUNE 2016.

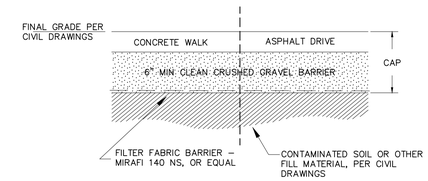
2) CORRECTIVE ACTION PLAN RECORD DRAWING PREPARED BY GREEN MOUNTAIN ENGINEERING BASED ON PLAN PREPARED BY CROSS CONSULTING ENGINEERING, TITLED "CORRECTIVE ACTION PLAN," DATED 3/15/19. THE CONSULTANT HAS NOT VERIFIED THE ACCURACY AND/OR COMPLETENESS OF ALL THIS INFORMATION AND SHALL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS THAT MAY BE INCORPORATED AS A RESULT OF ERRONEOUS INFORMATION PROVIDED BY OTHERS.



SITE PLAN
SCALE: 1"=20'



CLEAN SOIL CAP W/ GRASS DETAIL
NOT TO SCALE



CLEAN SOIL CAP W/ IMPERVIOUS SURFACE
NOT TO SCALE

LEGEND
EXISTING

- PROPERTY LINE
- RIGHT-OF-WAY
- INDEX CONTOUR
- MINOR CONTOUR
- FENCE – WOOD
- PAVED ROAD/DRIVE
- CONCRETE SIDEWALK
- WATER
- STORM SEWER
- UNDERGROUND ELECTRIC
- OVERHEAD WIRE
- SANITARY SEWER
- GAS
- HYDRANT
- VALVE
- MANHOLE
- UTILITY POLE
- CATCH BASIN
- SIGN
- LUMIERE

LEGEND
PROPOSED

- INDEX CONTOUR
- MINOR CONTOUR
- PAVED ROAD/DRIVE
- CONCRETE SIDEWALK
- UNDERGROUND ELEC
- OVERHEAD WIRE
- UTILITY POLE
- CONIFEROUS TREE

REV.	DATE	DESCRIPTION	BY
1	XX/XX/XX	REWSED PER ANR REVIEW COMMENTS	RSO

1438 SOUTH BROWNELL ROAD
WILLISTON, VERMONT 05495
PHONE: (802)862-5590
FAX: (802)862-7598
GREEN MOUNTAIN ENGINEERING
CIVIL WATER WASTEWATER
LE·Environmental

DRAWING TITLE: CORRECTIVE ACTION PLAN
PROJECT: CONGRESS STREET
CLIENT: TOWN OF ST. ALBANS, VERMONT

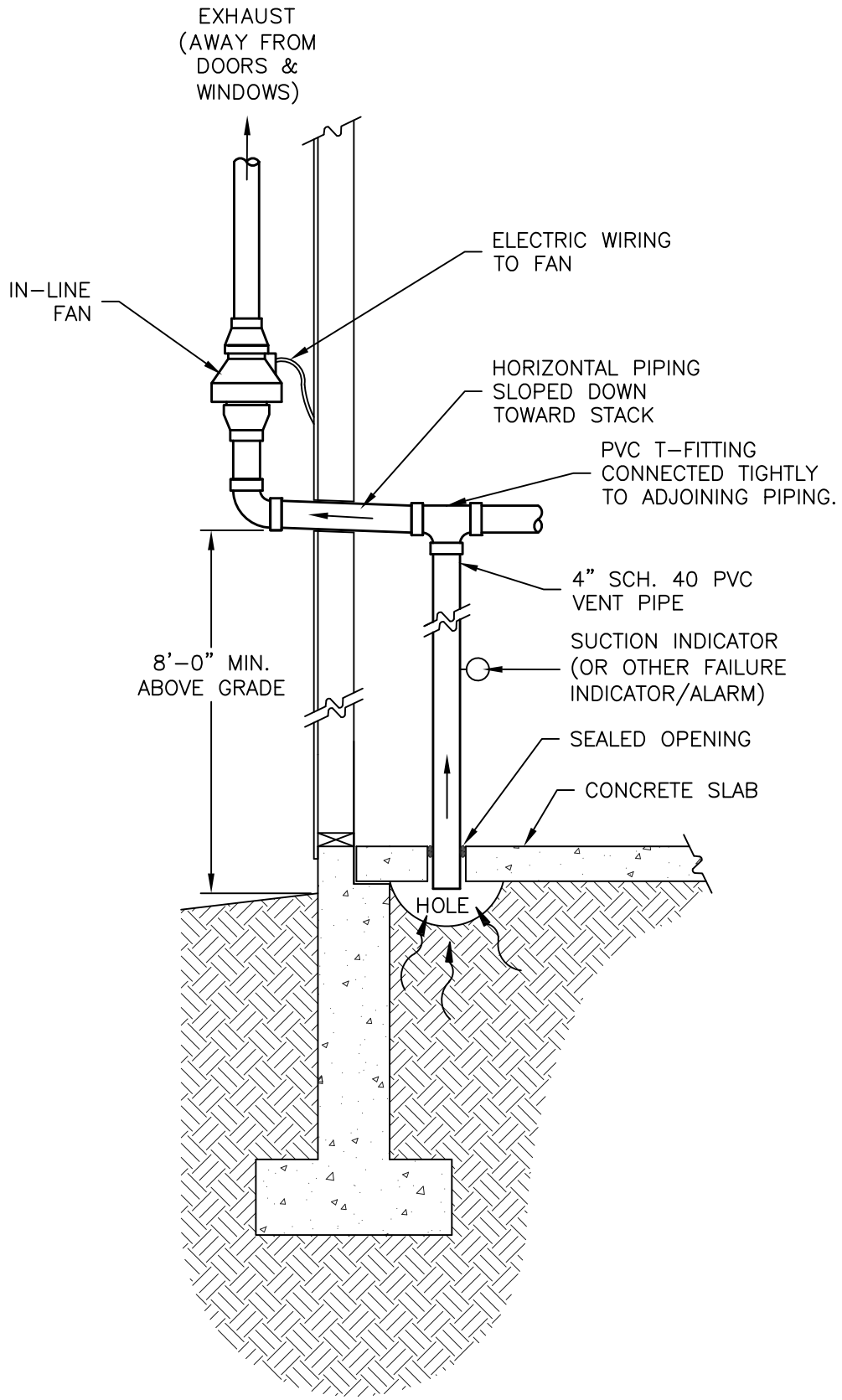
DESIGNED: AH	PLOT DATE: 05/10/19
DRAWN: JDS	SCALE: 1" = 20'
CHECKED: AH	DATE: MAY. 2019

PROJECT NO. 25-005.13

DRAWING NO. 1

SHEET 1 OF 3

FILE: S:\GME PROJECT FILES\25-005\25-005.13 ENVIRONMENTAL\CAD\25-005.13 CONGRESS STREET ST. ALBANS\DRAWINGS\CAME DRAWING - 05\05\2019.DWG



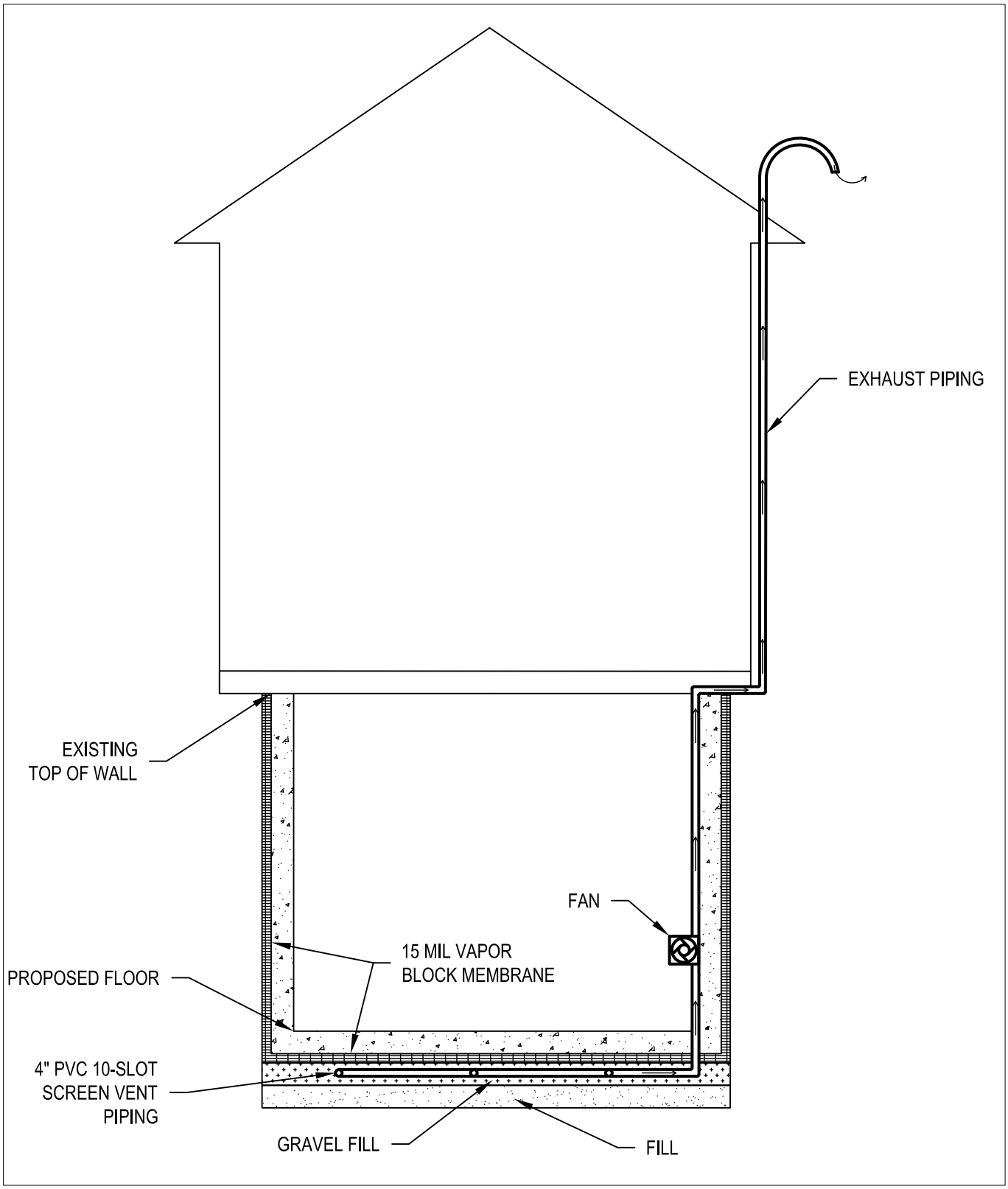
1438 SOUTH BROWNELL ROAD
WILLISTON, VERMONT 05495
PHONE: (802)862-5880
FAX: (802)862-7596

GREEN MOUNTAIN ENGINEERING
CIVIL WATER WASTEWATER

DRAFT

LE·Environmental

DRAWING TITLE: SSD SYSTEM - 12 CONGRESS ST	DESIGNED: XXX		PROJECT NO. 25-005.13
	DRAWN: JDS		
	CHECKED: AH		
PROJECT: CONGRESS ST	PLOT DATE: 03/13/19		DRAWING NO. 2
	SCALE: NTS		
CLIENT: TOWN OF ST ALBANS, VERMONT	DATE: MAR. 2019		SHEET 2 OF 3



1438 SOUTH BROWNELL ROAD
WILLISTON, VERMONT 05495
PHONE: (802)862-5590
FAX: (802)862-7598

GREEN MOUNTAIN ENGINEERING
CIVIL
WATER
WASTEWATER

DRAFT

LE-Environmental

DRAWING TITLE	TYPICAL PASSIVE SYSTEM
PROJECT	CONGRESS ST
CLIENT	TOWN OF ST ALBANS, VERMONT
DESIGNED	XXX
DRAWN	JDS
CHECKED	AH
PLOT DATE	03/13/19
SCALE	NTS
DATE	MAR. 2019
PROJECT NO.	25-005.13
DRAWING NO.	3
SHEET 3 OF 3	

APPENDIX B

COST ESTIMATE

Corrective Action Cost Estimate
Removal of a Portion of Contaminated Soil and Installation of Protective Soil, Concrete, and Asphalt Caps
Congress and Main Redevelopment Project
St. Albans, Vermont
April 2019

Task	Category	Description	No.		Per Unit Cost	Unit	Item Cost	Markup Factor	Total Item Cost	**Subtotals**
1.0	**Final Design / Permitting / Contractor Bid Support**									
	Project Coordination / Bid Support	Geologist	20	@	$100.00	/hr	$2,000.00	1.00	$2,000.00	
	Final Design / Bid Support	PE	25	@	$125.00	/hr	$3,125.00	1.00	$3,125.00	
	Principal Review	Principal	2	@	$125.00	/hr	$250.00	1.00	$250.00	
	Contractor Preparation / Coordination	Geologist	12	@	$100.00	/hr	$1,200.00	1.00	$1,200.00	**$6,575**
2.0	**Construction Inspection and Oversight (10 DAYS)**									
	Construction Inspection (10 Visits)	Geol./Engin.	50	@	$100.00	/hr	$5,000.00	1.00	$5,000.00	
	Travel (10 Visits)	Geol./Engin.	20	@	$100.00	/hr	$2,000.00	1.00	$2,000.00	
	Mileage (10 Visits)	Expense	1050	@	$0.545	/ea	$572.25	1.00	$572.25	**$7,572**
3.0	**Construction Costs (Site Work)**									
	Mobilization / Demobilization	Expense	1	@	$5,000.00	/ls	$5,000.00	1.00	$5,000.00	
	Soil Erosion Control	Contractor	1	@	$7,000.00	/ea	$7,000.00	1.00	$7,000.00	
	Common Excavation	Expense	8,000	@	$8.98	/cy	$71,840.00	1.00	$71,840.00	
	Asphalt (Aggregate Surface Course)	Expense	375	@	$38.88	/cy	$14,580.00	1.00	$14,580.00	
	Geotextile fabric	Expense	4,800	@	$1.01	/sy	$4,848.00	1.00	$4,848.00	
	Concrete Sidewalks	Expense	880	@	$6.52	/sf	$5,737.60	1.00	$5,737.60	
	Seed	Expense	28	@	$14.00	/lb	$392.00	1.00	$392.00	
	Top Soil	Expense	80	@	$28.87	/cy	$2,309.60	1.00	$2,309.60	
	Closed UST Removal/Disposal	Expense	1	@	$5,000.00	/ea	$5,000.00	1.00	$5,000.00	
	Characterization Sampling	Expense	20	@	$900.00	/ea	$18,000.00	1.00	$18,000.00	
	Contaminated Soil Disposal (Daily Cover)	Expense	9,439	@	$51.00	/ton	$481,389.00	1.00	$481,389.00	
	Contaminated Soil Disposal (Disposal)	Expense	311	@	$80.00	/ton	$24,880.00	1.00	$24,880.00	
	Clean Soil Sampling	Expense	2	@	$1,000.00	/ea	$2,000.00	1.00	$2,000.00	**$642,976**
4.0	**Construction Costs (SSV Systems)**									
	Crushed Stone	Expense	712	@	$31.90	/cy	$22,712.80	1.00	$22,712.80	
	15 mil membrane	Expense	14,550	@	$0.71	/sf	$10,330.50	1.00	$10,330.50	
	4" Concrete Slab	Expense	29100	@	$6.52	/sf	$189,732.00	1.00	$189,732.00	
	4" perforated SDR 35 PVC Pipe	Expense	1712	@	$1.25	/lf	$2,140.00	1.00	$2,140.00	
	3" SCH 40 PVC	Expense	200	@	$1.86	/lf	$372.00	1.00	$372.00	
	4" PVC End Cap	Expense	8	@	$5.00	/ea	$40.00	1.00	$40.00	
	4"x3" PVC TEE	Expense	3	@	$14.00	/ea	$42.00	1.00	$42.00	
	4"x4" SRD 35 TEE	Expense	18	@	$12.00	/ea	$216.00	1.00	$216.00	
	Labor-plumber	Expense	30	@	$80.00	/hr	$2,400.00	1.00	$2,400.00	
	Radonaway Fan	Expense	2	@	$250.00	/ea	$500.00	1.00	$500.00	
	Sensor / Alarm	Expense	2	@	$80.00	/ea	$160.00	1.00	$160.00	
	Fittings / Tubing	Expense	1	@	$25.00	/est	$25.00	1.00	$25.00	
	Electrical / Installation	Expense	2	@	$500.00	/ls	$1,000.00	1.00	$1,000.00	
	Monitoring Travel (2 Visits)	Geologist	10	@	$60.00	/hr	$600.00	1.00	$600.00	
	Monitoring (2 Visits)	Geologist	10	@	$90.00	/hr	$900.00	1.00	$900.00	
	Mileage	Expense	650	@	$0.57	/ea	$370.50	1.00	$370.50	
	PID	Expense	2	@	$80.00	/day	$160.00	1.00	$160.00	
	Micromanometer	Expense	1	@	$500.00	/ea	$500.00	1.00	$500.00	
	Temp/Humidity Pen Rental	Expense	2	@	$15.00	/day	$30.00	1.00	$30.00	
	Miscellaneous Tubing	Expense	2	@	$20.00	/ea	$40.00	1.00	$40.00	
	Reporting	Geologist	6	@	$90.00	/ea	$540.00	1.00	$540.00	**$232,811**
5.0	**Completion Report Preparation**									
	Report	Geol./Engin.	16	@	$100.00	/hr	$1,600.00	1.00	$1,600.00	
	Review	PE	8	@	$125.00	/hr	$1,000.00	1.00	$1,000.00	**$2,600**

Cleanup Cost	**$892,534**
20% Contingency	**$178,507**
Total Cost For Project	**$1,071,041**

APPENDIX C

PHASE II ESA SUMMARY

Liquid Level Monitoring Data
Brownfields Phase II ESA
Main and Congress Redevelopment
St. Albans, Vermont

Measurement Date: July 18, 2018

Well I.D.	Top of Casing Elevation	Depth To Product btoc	Depth To Water btoc	Product Thickness	Specific Gravity Of Product	Water Equivalent	Corrected Depth To Water	Corrected Water Table Elevation
MW-1	93.20	-	7.98	-	-	-	-	85.22
MW-2	93.95	-	8.71	-	-	-	-	85.24
MW-3	99.70	-	8.60	-	-	-	-	91.10
MW-4	100.48	-	8.26	-	-	-	-	92.22

Notes:
All Values Reported in Feet
btoc - Below Top of Casing
Elevation data relative to 100' at northeast corner of 12 Congress St

Liquid Level Monitoring Data
Brownfields Phase II ESA
Main and Congress Redevelopment
St. Albans, Vermont

Measurement Date: December 11, 2018

Well I.D.	Top of Casing Elevation	Depth To Product btoc	Depth To Water btoc	Product Thickness	Specific Gravity Of Product	Water Equivalent	Corrected Depth To Water	Corrected Water Table Elevation
MW-1	93.20	-	7.63	-	-	-	-	85.57
MW-2	93.95	-	8.61	-	-	-	-	85.34
MW-3	99.70	-	6.71	-	-	-	-	92.99
MW-4	100.48	-	6.98	-	-	-	-	93.50

Notes:
All Values Reported in Feet
btoc - Below Top of Casing
Elevation data relative to 100' at northeast corner of 12 Congress St

Brownfields Phase II Environmental Site Assessment
Soil Sampling Data Summary
Congress and Main Street
St. Albans, Vermont

Soil Sample *Sample Depth (ft bg)* *PID reading (ppm)* *Sample Date*	*SB-1s* *0-2* *0.0* *7/9/18*	*SB-1d* *2-10* *0.3* *7/9/18*	*SB-2s* *0-2* *0.0* *7/9/18*	*SB-3s* *0-2* *0.1* *7/9/18*	*SB-3d* *2-8* *0.1* *7/9/18*	*SB-4s* *0-2* *0.1* *7/9/18*	*SB-4d* *2-8* *0.3* *7/9/18*	*SB-5s* *0-2* *0.0* *7/9/18*	*SB-6s* *0-2* *0.1* *7/9/18*	*SB-7s* *0-2* *0.0* *7/9/18*	*SB-7d* *2-7.4* *0.1* *7/9/18*	*SB-8s* *0-2* *0.1* *7/9/18*	*Duplicate* *2-10* *0.3* *7/9/18*	EPA Residential RSL (mg/kg)	EPA Industrial RSL (mg/kg)	VSL Residential (mg/kg)
VOCs, EPA Method 8260C (mg/kg)																
Dichlorodifluoromethane	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	87	370	NA
Chloromethane	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	110	460	NA
Vinyl Chloride	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	0.059	1.7	NA
Bromomethane	ND<0.2	ND<0.2	ND<0.2	ND<0.2	ND<0.2	ND<0.2	ND<0.2	ND<0.2	ND<0.2	ND<0.2	ND<0.2	ND<0.2	ND<0.2	6.8	30	NA
Chloroethane (ethyl chloride)	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	14,000	57,000	NA
Trichlorofluoromethane	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	23,000	350,000	NA
Diethyl Ether	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	NA	NA	NA
Acetone	ND<2	ND<2	ND<2	ND<2	ND<2	ND<2	ND<2	ND<2	ND<2	ND<2	ND<2	ND<2	ND<2	NA	670,000	NA
1 ,1-Dichloroethene	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	230	1,000	NA
Methylene chloride	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	57	1,000	NA
Carbon disulfide	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	770	3,500	NA
MTBE	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	47	210	647
trans-1,2-Dichloroethene	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	NA	23,000	150
1,1-Dichloroethane	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	3.6	16	NA
2,2-Dichloropropane	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	NA	NA	NA
cis-1,2-Dichloroethene	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	NA	2,300	135
2-Butanone(MEK)	ND<0.5	ND<0.5	ND<0.5	ND<0.06	ND<0.5	ND<0.06	ND<0.5	ND<0.5	ND<0.5	ND<0.07	ND<0.06	ND<0.5	ND<0.5	NA	190,000	26000
Bromochloromethane	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	NA	630	129
Tetrahydrofuran(THF)	ND<0.5	ND<0.5	ND<0.5	ND<0.6	ND<0.5	ND<0.6	ND<0.5	ND<0.5	ND<0.5	ND<0.7	ND<0.6	ND<0.5	ND<0.5	NA	NA	NA
Chloroform	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	0.32	1.4	NA
1,1,1-Trichloroethane	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	8,100	36,000	NA
Carbon tetrachloride	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	NA	2.9	0.247
1 ,1-Dichloropropene	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	NA	NA	NA
Benzene	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	NA	5.1	0.442
1,2-Dichloroethane	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	NA	2	0.175
Trichloroethene (TCE)	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	NA	6	0.442
1,2-Dichloropropane	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	1	4.4	NA
Dibromomethane	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	24	99	NA
Bromodichloromethane	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	0.29	1.3	NA
4-Methyl-2-pentanone(MIBK)	ND<0.5	ND<0.5	ND<0.5	ND<0.6	ND<0.5	ND<0.6	ND<0.5	ND<0.5	ND<0.5	ND<0.7	ND<0.6	ND<0.5	ND<0.5	33,000	140,000	NA
cis-1,3-Dichloropropene	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	1.8	8.2	NA
Toluene	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	NA	47,000	4640
trans-1,3-Dichloropropene	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	1.8	8.2	NA
1,1,2-Trichloroethane	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	1.1	5	NA
2-Hexanone	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	200	1,300	NA
Tetrachloroethene (PCE)	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	NA	100	1.46
1,3-Dichloropropane	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	1,600	23,000	NA
Dibromochloromethane	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	8.3	39	NA
1,2-Dibromoethane(EDB)	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	0.036	0.16	NA
Chlorobenzene	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	NA	1,300	273

NOTES:
Soil Screening Levels (RSL/SSL) from July 2017 Vermont DEC Investigation and Remediation of Contaminated Properties Rule
Shaded cell = reporting limit exceeds RSL/VSL.
NA = No RSL/VSL available

Brownfields Phase II Environmental Site Assessment
Soil Sampling Data Summary
Main and Congress Street
St. Albans, Vermont

Soil Sample	*SB-1s*	*SB-1d*	*SB-2s*	*SB-3s*	*SB-3d*	*SB-4s*	*SB-4d*	*SB-5s*	*SB-6s*	*SB-7s*	*SB-7d*	*SB-8s*	*Duplicate*	EPA Residential RSL (mg/kg)	EPA Industrial RSL (mg/kg)	VSL Residential (mg/kg)
Sample Depth (ft bg)	*0-2*	*2-10*	*0-2*	*0-2*	*2-8*	*0-2*	*2-8*	*0-2*	*0-2*	*0-2*	*2-7.4*	*0-2*	*2-10*			
PID reading (ppm)	*0.0*	*0.3*	*0.0*	*0.1*	*0.1*	*0.1*	*0.3*	*0.0*	*0.1*	*0.0*	*0.1*	*0.1*	*0.3*			
Sample Date	*7/9/18*	*7/9/18*	*7/9/18*	*7/9/18*	*7/9/18*	*7/9/18*	*7/9/18*	*7/9/18*	*7/9/18*	*7/9/18*	*7/9/18*	*7/9/18*	*7/9/18*			
VOCs, EPA Method 8260C (mg/kg) (continued)																
1,1,1,2-Tetrachloroethane	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	2	8.8	NA
Ethylbenzene	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	NA	25	2.21
mp-Xylene	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	**0.057**	ND<0.07	ND<0.06	ND<0.05	ND<0.05	550	2,400	NA
o-Xylene	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	**0.073**	ND<0.07	ND<0.06	ND<0.05	ND<0.05	650	2,800	NA
Styrene	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	6,000	35,000	NA
Bromoform	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	19	86	NA
IsoPropylbenzene (cumene)	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	1900	9900	NA
Bromobenzene	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	290	1,800	NA
1,1,2,2-Tetrachloroethane	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	0.6	2.7	NA
1,2,3-Trichloropropane	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	NA	0.11	0.00324
n-Propylbenzene	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	3,800	24,000	NA
2-Chlorotoluene	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	1,600	23,000	NA
4-Chlorotoluene	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	1,600	23,000	NA
1,3,5-trimethylbenzene	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	NA	12,000	264*
tert-Butylbenzene	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	7,800	120,000	NA
1,2,4-trimethylbenzene	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	NA	240	264*
sec-Butylbenzene	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	7,800	120,000	NA
1,3-Dichlorobenzene	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	NA	NA	NA
p-Isopropyltoluene (p-cymene)	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	NA	NA	NA
1,4-Dichlorobenzene	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	2.6	11	NA
1,2-Dichlorobenzene	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	1,800	9,300	NA
n-Butylbenzene	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	3,900	58,000	NA
1,2-Dibromo-3-chloropropane	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	NA	0.064	0.00327
1,2,4-Trichlorobenzene	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	24	110	NA
Hexachlorobutadiene	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	1.2	5.3	NA
Naphthalene	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	NA	17	1.42
1,2,3-Trichlorobenzene	ND<0.05	ND<0.05	ND<0.05	ND<0.06	ND<0.05	ND<0.06	ND<0.05	ND<0.05	ND<0.05	ND<0.07	ND<0.06	ND<0.05	ND<0.05	63	930	NA
Total Reported VOCs	ND	ND	ND	ND	ND	ND	ND	ND	**0.130**	ND	ND	ND	ND	-	-	-

NOTES:
IROCP = July 2017 Vermont DEC Investigation and Remediation of Contaminated Properties Rule
Shaded cell = reporting limit exceeds USEPA or Vermont Residential Soil Screening Value
NA = No RSL/VSL available

Brownfields Phase II Environmental Site Assessment
Soil Sampling Data Summary
Main and Congress Street
St. Albans, Vermont

Soil Sample	*SB-1s*	*SB-1d*	*SB-2s*	*SB-3s*	*SB-3d*	*SB-4s*	*SB-4d*	*SB-5s*	*SB-6s*	*SB-7s*	*SB-7d*	*SB-8s*	*Duplicate*	EPA Residential RSL (mg/kg)	EPA Industrial RSL (mg/kg)	VSL Residential (mg/kg)	VT Statewide Background Soil Concentration (mg/kg)
Sample Depth (ft bg)	*0-2*	*2-10*	*0-2*	*0-2*	*2-8*	*0-2*	*2-8*	*0-2*	*0-2*	*0-2*	*2-7.4*	*0-2*	*2-10*				
PID reading (ppm)	*0.0*	*0.3*	*0.0*	*0.1*	*0.1*	*0.1*	*0.3*	*0.0*	*0.1*	*0.0*	*0.1*	*0.1*	*0.3*				
Sample Date	*7/9/18*	*7/9/18*	*7/9/18*	*7/9/18*	*7/9/18*	*7/9/18*	*7/9/18*	*7/9/18*	*7/9/18*	*7/9/18*	*7/9/18*	*7/9/18*	*7/9/18*				
TOTAL METALS, EPA Method 6020 (mg/kg, dry)																	
Total Arsenic	**2.9**	**8.5**	**4.7**	**7.0**	**5.3**	**10**	**6.8**	**71**	**7.2**	**16**	**21**	**6.6**	**10**	NA	NA	NA	16/16
Total Barium	**39**	**110**	**36**	**130**	**66**	**110**	**92**	**130**	**77**	**52**	**240**	**78**	**150**	NA	220,000	11,700	NA
Total Cadmium	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	**0.81**	ND<0.5	ND<0.5	ND<0.5	ND<0.5	**0.63**	NA	980	7.15	NA
Total Chromium	**6.8**	**19**	**11**	**19**	**21**	**15**	**22**	**24**	**13**	**11**	**26**	**17**	**23**	NA	NA	NA	NA
Total Lead	**66**	**220**	**11**	**430**	**11**	**530**	**21**	**240**	**230**	**50**	**120**	**150**	**270**	400	800	NA	41/111
Total Mercury	ND<0.1	**0.67**	ND<0.1	**0.24**	ND<0.1	ND<0.1	ND<0.1	**8.9**	**0.18**	**0.16**	**0.40**	**0.45**	**0.73**	NA	46	10.9	NA
Total Selenium	ND<0.5	**2.1**	**1.3**	**1.8**	**1.7**	**1.8**	**1.8**	**0.7**	**0.67**	**1.2**	**1.4**	**1.4**	**1.4**	NA	5,800	382	NA
Total Silver	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NA	5,800	247	NA
PAH EPA Method 8270 (mg/kg)																	
Naphthalene	**0.022**	**0.026**	**0.018**	**0.033**	ND<0.008	**0.019**	ND<0.008	**0.077**	**0.14**	**0.011**	**0.027**	**0.11**	**0.029**	NA	17	1.42	NA
2-Methylnaphthalene	**0.011**	ND<0.008	ND<0.007	**0.0095**	ND<0.008	**0.015**	ND<0.008	**0.050**	**0.14**	**0.0083**	**0.010**	**0.032**	ND<0.008	240	3,000	NA	NA
1-Methylnaphthalene	ND<0.007	ND<0.008	ND<0.007	ND<0.008	ND<0.008	**0.011**	ND<0.008	**0.033**	**0.17**	**0.0082**	**0.0092**	**0.021**	ND<0.008	18	73	NA	NA
Acenaphthylene	**0.042**	**0.043**	ND<0.007	**0.091**	ND<0.008	**0.052**	ND<0.008	**0.16**	**1.2**	**0.048**	**0.046**	**0.34**	**0.045**	NA	NA	NA	NA
Acenaphthene	ND<0.007	ND<0.008	ND<0.007	**0.012**	ND<0.008	**0.011**	ND<0.008	**0.019**	**0.057**	ND<0.008	ND<0.008	**0.016**	ND<0.008	3,600	45,000	NA	NA
Fluorene	**0.0074**	ND<0.008	ND<0.007	**0.021**	ND<0.008	**0.015**	ND<0.008	**0.037**	**0.23**	**0.0096**	ND<0.008	**0.025**	ND<0.008	2,400	30,000	NA	NA
Phenanthrene	**0.14**	**0.11**	**0.019**	**0.47**	ND<0.008	**0.26**	ND<0.008	**0.61**	**3.5**	**0.11**	**0.14**	**0.35**	**0.10**	NA	NA	NA	NA
Anthracene	**0.030**	**0.037**	ND<0.007	**0.11**	ND<0.008	**0.048**	ND<0.008	**0.13**	**0.64**	**0.023**	**0.037**	**0.15**	**0.032**	18,000	230,000	NA	NA
Fluoranthene	**0.35**	**0.40**	**0.031**	**1.2**	ND<0.008	**0.46**	ND<0.008	**1.2**	**4.5**	**0.21**	**0.43**	**1.5**	**0.38**	2,400	30,000	NA	NA
Pyrene	**0.30**	**0.36**	**0.024**	**1.0**	ND<0.008	**0.43**	ND<0.008	**0.93**	**3.2**	**0.18**	**0.33**	**1.2**	**0.30**	1,800	23,000	NA	NA
Benzo(a)anthracene	**0.18**	**0.28**	**0.016**	**0.60**	ND<0.008	**0.21**	ND<0.008	**0.60**	**1.7**	**0.098**	**0.22**	**1.3**	**0.23**	0.16	2.9	NA	NA
Chrysene	**0.22**	**0.28**	**0.017**	**0.65**	ND<0.008	**0.29**	ND<0.008	**0.74**	**2.9**	**0.14**	**0.30**	**1.5**	**0.25**	16	290	NA	NA
Benzo(b)fluoranthene	**0.28**	**0.33**	**0.021**	**0.69**	ND<0.008	**0.31**	ND<0.008	**0.93**	**4.1**	**0.20**	**0.37**	**2.7**	**0.36**	0.16	2.9	NA	NA
Benzo(k)fluoranthene	**0.10**	**0.14**	**0.0075**	**0.27**	ND<0.008	**0.11**	ND<0.008	**0.33**	**1.4**	**0.071**	**0.13**	**1.1**	**0.13**	1.6	29	NA	NA
Benzo(a)pyrene	**0.21**	**0.28**	**0.015**	**0.59**	ND<0.008	**0.24**	ND<0.008	**0.67**	**2.2**	**0.13**	**0.24**	**1.8**	**0.25**	NA	NA	0.076/1.54*	NA
Indeno(1,2,3-cd)pyrene	**0.16**	**0.19**	**0.012**	**0.38**	ND<0.008	**0.19**	ND<0.008	**0.31**	**0.91**	**0.054**	**0.094**	**0.68**	**0.092**	0.16	2.9	NA	NA
Dibenz(a,h)anthracene	**0.039**	**0.048**	ND<0.007	**0.091**	ND<0.008	**0.045**	ND<0.008	**0.079**	**0.22**	**0.015**	**0.026**	**0.17**	**0.025**	0.016	0.29	NA	NA
Benzo(g,h,i)perylene	**0.15**	**0.16**	**0.012**	**0.31**	ND<0.008	**0.18**	ND<0.008	**0.25**	**0.78**	**0.060**	**0.075**	**0.54**	**0.069**	NA	NA	NA	NA
Total Reported PAHs	**2.24**	**2.68**	**0.193**	**6.53**	ND	**2.90**	ND	**7.16**	**27.99**	**1.38**	**2.48**	**13.53**	**2.29**	--	--	--	--
PAH Toxicity Equivalency as B[a]P	**0.31**	**0.41**	**0.02**	**0.85**	**0.01**	**0.36**	**0.01**	**0.94**	**3.11**	**0.18**	**0.34**	**2.45**	**0.34**	NA	NA	NA	0.026/0.580
TCLP METALS, EPA Method 6020 (mg/L)														Vermont Hazardous Waste Standard (mg/L)			
TCLP Lead	NT	ND<0.5	NT	ND<0.5	NT	ND<0.5	NT	ND<0.5	ND<0.5	NT	ND<0.5	ND<0.5	ND<0.5	5.0			
TCLP Mercury	NT	NT	NT	NT	NT	NT	NT	ND<0.01	NT	NT	NT	NT	NT	0.2			

NOTES:
EPA Regional Screening Levels, VT Screening levels, and VT Background Concrentrations from Vermont DEC Investigation and Remediation of Contaminated Properties Rule dated July 27, 2017
NA = No screening level or background concentration available
*VSL for B(a)P presented as residential/industrial
Vermont Statewide Background Concentration presented as rural/urban; The Background Concentration values are used when the background value for benzo(a)pyrene (TEQ) or arsenic is greater than the VSL.
ND<xx = Not Detected< Detection Limit; Results reported above detection limits are indicated in bold
Detection limits and reported concentrations equal to or above the residential regulatory standard are shaded

Toxic Equivalency Calculations
Main and Congress Street
St. Albans, Vermont

Soil Sample SB-1s

Contaminant	Concentration (mg/kg)	Toxicity Equivalency Factor	Toxicity Equivalents to Benzo(a)pyrene
Benzo(a)anthracene	**0.18**	0.1	0.018
Chrysene	**0.22**	0.001	0.00022
Benzo(b)fluoranthene	**0.28**	0.1	0.028
Benzo(k)fluoranthene	**0.10**	0.01	0.001
Benzo(a)pyrene	**0.21**	1	0.21
Indeno(1,2,3-cd)pyrene	**0.16**	0.1	0.016
Dibenz(a,h)anthracene	**0.039**	1	0.039
		Total Benzo(a)pyrene Equivalent =	**0.31**

Soil Sample SB-1d

Contaminant	Concentration (mg/kg)	Toxicity Equivalency Factor	Toxicity Equivalents to Benzo(a)pyrene
Benzo(a)anthracene	**0.28**	0.1	0.028
Chrysene	**0.28**	0.001	0.00028
Benzo(b)fluoranthene	**0.33**	0.1	0.033
Benzo(k)fluoranthene	**0.14**	0.01	0.0014
Benzo(a)pyrene	**0.28**	1	0.28
Indeno(1,2,3-cd)pyrene	**0.19**	0.1	0.019
Dibenz(a,h)anthracene	**0.048**	1	0.048
		Total Benzo(a)pyrene Equivalent =	**0.41**

Soil Sample: SB-2s

Contaminant	Concentration (mg/kg)	Toxicity Equivalency Factor	Toxicity Equivalents to Benzo(a)pyrene
Benzo(a)anthracene	**0.016**	0.1	0.0016
Chrysene	**0.017**	0.001	0.000017
Benzo(b)fluoranthene	**0.021**	0.1	0.0021
Benzo(k)fluoranthene	**0.0075**	0.01	0.000075
Benzo(a)pyrene	**0.015**	1	0.015
Indeno(1,2,3-cd)pyrene	**0.012**	0.1	0.0012
Dibenz(a,h)anthracene	ND<0.007	1	0.0035
		Total Benzo(a)pyrene Equivalent =	**0.02**

Soil Sample: SB-3s

Contaminant	Concentration (mg/kg)	Toxicity Equivalency Factor	Toxicity Equivalents to Benzo(a)pyrene
Benzo(a)anthracene	**0.60**	0.1	0.06
Chrysene	**0.65**	0.001	0.00065
Benzo(b)fluoranthene	**0.69**	0.1	0.069
Benzo(k)fluoranthene	**0.27**	0.01	0.0027
Benzo(a)pyrene	**0.59**	1	0.59
Indeno(1,2,3-cd)pyrene	**0.38**	0.1	0.038
Dibenz(a,h)anthracene	**0.091**	1	0.091
		Total Benzo(a)pyrene Equivalent =	**0.85**

Soil Sample: SB-3d

Contaminant	Concentration (mg/kg)	Toxicity Equivalency Factor	Toxicity Equivalents to Benzo(a)pyrene
Benzo(a)anthracene	ND<0.008	0.1	0.0004
Chrysene	ND<0.008	0.001	0.0000045
Benzo(b)fluoranthene	ND<0.008	0.1	0.00045
Benzo(k)fluoranthene	ND<0.008	0.01	0.000045
Benzo(a)pyrene	ND<0.008	1	0.0045
Indeno(1,2,3-cd)pyrene	ND<0.008	0.1	0.00045
Dibenz(a,h)anthracene	ND<0.008	1	0.0045
		Total Benzo(a)pyrene Equivalent =	**0.01**

Soil Sample: SB-4s

Contaminant	Concentration (mg/kg)	Toxicity Equivalency Factor	Toxicity Equivalents to Benzo(a)pyrene
Benzo(a)anthracene	**0.21**	0.1	0.021
Chrysene	**0.29**	0.001	0.00029
Benzo(b)fluoranthene	**0.31**	0.1	0.031
Benzo(k)fluoranthene	**0.11**	0.01	0.0011
Benzo(a)pyrene	**0.24**	1	0.24
Indeno(1,2,3-cd)pyrene	**0.19**	0.1	0.019
Dibenz(a,h)anthracene	**0.045**	1	0.045
		Total Benzo(a)pyrene Equivalent =	**0.36**

Soil Sample: SB-4d

Contaminant	Concentration (mg/kg)	Toxicity Equivalency Factor	Toxicity Equivalents to Benzo(a)pyrene
Benzo(a)anthracene	ND<0.008	0.1	0.0004
Chrysene	ND<0.008	0.001	0.0000045
Benzo(b)fluoranthene	ND<0.008	0.1	0.00045
Benzo(k)fluoranthene	ND<0.008	0.01	0.000045
Benzo(a)pyrene	ND<0.008	1	0.0045
Indeno(1,2,3-cd)pyrene	ND<0.008	0.1	0.00045
Dibenz(a,h)anthracene	ND<0.008	1	0.0045
		Total Benzo(a)pyrene Equivalent =	**0.01**

Brownfields Phase II Environmental Site Assessment
Groundwater Sampling Data Summary
Main and Congress Street

Groundwater Sample	*MW-1*	*MW-2*	*MW-3*	*MW-4*	*Duplicate*	Vermont
Depth to Groundwater (Ft)	*7.98*	*8.71*	*8.60*	*8.26*	*8.26*	Groundwater
pH (standard units)	*7.31*	*6.86*	*7.26*	*7.17*	*7.17*	Enforcement
Conductivity (umhos)	*1,000*	*4,250*	*2,140*	*1,942*	*1,924*	Standard
Temperature (celcius)	*15.3*	*15.4*	*16.3*	*17.2*	*17.2*	
Turbidity (n.t.u.)	*1,100*	*15.1*	*4.69*	*21.6*	*21.6*	
Sample Date	*7/18/18*	*7/18/18*	*7/18/18*	*7/18/18*	*7/18/18*	
VOCs, EPA Method 8260c (ug/l)						
Dichlorodifluoromethane	ND<5	ND<5	ND<5	ND<5	ND<5	1000
Chloromethane	ND<2	ND<2	ND<2	ND<2	ND<2	30
Vinyl Chloride	ND<2	ND<2	ND<2	ND<2	ND<2	2
Bromomethane	ND<2	ND<2	ND<2	ND<2	ND<2	10
Chloroethane	ND<5	ND<5	ND<5	ND<5	ND<5	NA
Trichlorofluoromethane	ND<5	ND<5	ND<5	ND<5	ND<5	2100
Diethyl Ether	ND<5	ND<5	ND<5	ND<5	ND<5	NA
Acetone	**13**	**78**	ND<10	ND<10	ND<10	700
1 ,1-Dichloroethene	ND<1	ND<1	ND<1	ND<1	ND<1	7
Methylene chloride	ND<5	ND<5	ND<5	ND<5	ND<5	5
Carbon disulfide	ND<5	ND<5	ND<5	ND<5	ND<5	NA
Methyl-t-butyl ether (MTBE)	ND<5	ND<5	ND<5	ND<5	ND<5	40
trans-1,2-Dichloroethene	ND<2	ND<2	ND<2	ND<2	ND<2	100
1,1-Dichloroethane	ND<2	ND<2	ND<2	ND<2	ND<2	70
2,2-Dichloropropane	ND<2	ND<2	ND<2	ND<2	ND<2	NA
cis-1,2-Dichloroethene	ND<2	ND<2	ND<2	ND<2	ND<2	70
2-Butanone(MEK)	ND<10	ND<10	ND<10	ND<10	ND<10	4200
Bromochloromethane	ND<2	ND<2	ND<2	ND<2	ND<2	90
Tetrahydrofuran(THF)	ND<10	ND<10	ND<10	ND<10	ND<10	NA
Chloroform	ND<2	ND<2	ND<2	ND<2	ND<2	80*
1,1,1-Trichloroethane	ND<2	ND<2	ND<2	ND<2	ND<2	200
Carbon tetrachloride	ND<2	ND<2	ND<2	ND<2	ND<2	5
1 ,1-Dichloropropene	ND<2	ND<2	ND<2	ND<2	ND<2	NA
Benzene	ND<1	ND<1	ND<1	ND<1	ND<1	5
1,2-Dichloroethane	ND<2	ND<2	ND<2	ND<2	ND<2	5
Trichloroethene (TCE)	ND<2	ND<2	ND<2	ND<2	ND<2	5
1,2-Dichloropropane	ND<2	ND<2	ND<2	ND<2	ND<2	5
Dibromomethane	ND<2	ND<2	ND<2	ND<2	ND<2	NA
Bromodichloromethane	ND<1	ND<1	ND<1	ND<1	ND<1	80*
4-Methyl-2-pentanone(MIBK)	ND<10	ND<10	ND<10	ND<10	ND<10	560
cis-1,3-Dichloropropene	ND<1	ND<1	ND<1	ND<1	ND<1	0.5
Toluene	ND<1	ND<1	ND<1	ND<1	ND<1	1000
trans-1,3-Dichloropropene	ND<1	ND<1	ND<1	ND<1	ND<1	0.5
1,1,2-Trichloroethane	ND<2	ND<2	ND<2	ND<2	ND<2	5
2-Hexanone	ND<10	ND<10	ND<10	ND<10	ND<10	NA
Tetrachloroethene (PCE)	ND<2	ND<2	ND<2	ND<2	ND<2	5
1,3-Dichloropropane	ND<2	ND<2	ND<2	ND<2	ND<2	NA

Groundwater Enforcement Standard from Groundwater Protection Rule and Strategy, 12/16

ND<xx = Not Detected< Detection Limit

Results reported above detection limits are indicated in bold

Detection limits and reported concentrations or above the enforcement standard are shaded

NA = No current enforcement standard

* means the indicated enforcement standard is for total trihalomethanes

Brownfields Phase II Environmental Site Assessment
Groundwater Sampling Data Summary
Main and Congress Street

Groundwater Sample *Sample Date*	*MW-1* *7/18/18*	*MW-2* *7/18/18*	*MW-3* *7/18/18*	*MW-4* *7/18/18*	*Duplicate* *7/18/18*	VGES
VOCs, EPA Method 8260c (ug/l)						
Dibromochloromethane	ND<2	ND<2	ND<2	ND<2	ND<2	80*
1,2-Dibromoethane(EDB)	ND<1	ND<1	ND<1	ND<1	ND<1	0.05
Chlorobenzene	ND<2	ND<2	ND<2	ND<2	ND<2	100
1,1,1,2-Tetrachloroethane	ND<2	ND<2	ND<2	ND<2	ND<2	70
Ethylbenzene	ND<1	ND<1	ND<1	ND<1	ND<1	700
mp-Xylene	ND<1	ND<1	ND<1	ND<1	ND<1	10000
o-Xylene	ND<1	ND<1	ND<1	ND<1	ND<1	10000
Styrene	ND<1	ND<1	ND<1	ND<1	ND<1	100
Bromoform	ND<2	ND<2	ND<2	ND<2	ND<2	80*
IsoPropylbenzene	ND<1	ND<1	ND<1	ND<1	ND<1	NA
Bromobenzene	ND<2	ND<2	ND<2	ND<2	ND<2	NA
1,1,2,2-Tetrachloroethane	ND<2	ND<2	ND<2	ND<2	ND<2	NA
1,2,3-Trichloropropane	ND<2	ND<2	ND<2	ND<2	ND<2	5
n-Propylbenzene	ND<1	ND<1	ND<1	ND<1	ND<1	NA
2-Chlorotoluene	ND<2	ND<2	ND<2	ND<2	ND<2	100
4-Chlorotoluene	ND<2	ND<2	ND<2	ND<2	ND<2	100
1,3,5-trimethylbenzene	ND<1	ND<1	ND<1	ND<1	ND<1	4
tert-Butylbenzene	ND<1	ND<1	ND<1	ND<1	ND<1	NA
1,2,4-trimethylbenzene	**1.8**	ND<1	ND<1	ND<1	ND<1	5
sec-Butylbenzene	ND<1	ND<1	ND<1	ND<1	ND<1	NA
1,3-Dichlorobenzene	ND<1	ND<1	ND<1	ND<1	ND<1	600
p-Isopropyltoluene	ND<1	ND<1	ND<1	ND<1	ND<1	NA
1,4-Dichlorobenzene	ND<1	ND<1	ND<1	ND<1	ND<1	75
1,2-Dichlorobenzene	ND<1	ND<1	ND<1	ND<1	ND<1	600
n-Butylbenzene	ND<1	ND<1	ND<1	ND<1	ND<1	NA
1,2-Dibromo-3-chloropropane	ND<2	ND<2	ND<2	ND<2	ND<2	0.2
1,3,5-Trichlorobenzene	ND<1	ND<1	ND<1	ND<1	ND<1	40
1,2,4-Trichlorobenzene	ND<1	ND<1	ND<1	ND<1	ND<1	70
Hexachlorobutadiene	ND<1	ND<1	ND<1	ND<1	ND<1	NA
Naphthalene	ND<5	ND<5	ND<5	ND<5	ND<5	20
1,2,3-Trichlorobenzene	ND<1	ND<1	ND<1	ND<1	ND<1	NA
Total Reported VOCs	**15**	**78**	ND	ND	ND	

Groundwater Enforcement Standard from Groundwater Protection Rule and Strategy, 12/16

ND<xx = Not Detected< Detection Limit

Results reported above detection limits are indicated in bold

Detection limits and reported concentrations or above the enforcement standard are shaded

NA = No current enforcement standard

* means the indicated enforcement standard is for total trihalomethanes

Brownfields Phase II Environmental Site Assessment
Groundwater Sampling Data Summary
Main and Congress Street

Groundwater Sample *Sample Date*	*MW-1* *7/18/18*	*MW-2* *7/18/18*	*MW-3* *7/18/18*	*MW-4* *7/18/18*	*Duplicate* *7/18/18*	VGES
TOTAL METALS, EPA Method 6020a (mg/l)						
Total Arsenic	**0.012**	**0.0039**	ND<0.001	**0.0022**	**0.0020**	0.010
Total Barium	**0.29**	**0.13**	**0.21**	**0.19**	**0.19**	2
Total Cadmium	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	0.005
Total Chromium	**0.017**	ND<0.001	ND<0.001	**0.0034**	**0.0031**	0.100
Total Lead	**0.15**	**0.0018**	ND<0.001	**0.0019**	**0.0018**	0.015
Total Mercury	0.00029	ND<0.0001	ND<0.0001	ND<0.0001	ND<0.0001	0.002
Total Selenium	**0.015**	**0.0066**	**0.0032**	**0.0066**	**0.0054**	0.05
Total Sliver	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	0.1

Groundwater Enforcement Standard from Groundwater Protection Rule and Strategy, 12/16

ND<xx = Not Detected< Detection Limit

Results reported above detection limits are indicated in bold

Detection limits and reported concentrations or above the enforcement standard are shaded

NA = No current enforcement standard

Brownfields Phase II Environmental Site Assessment
Subslab Vapor Sampling Summary
Main and Congress Redevelopment Project

Analyte Category/Compound	Subslab-1 Concentration ug/m^3	Data Qualifier	Subslab-2 Reported Concentration ug/m^3	Data Qualifier	Subslab-3 Reported Concentration ug/m^3	Data Qualifier	Subslab-4 Reported Concentration ug/m^3	Data Qualifier	Ambient Air Reported Concentration ug/m^3	Data Qualifier	I-Rule VI Screening Values, Sub-Slab Soil Gas (residential, ug/m3)	I-Rule VI Screening Values, Sub-Slab Soil Gas (industrial, ug/m3)
Sample Date:	7/18/18		7/18/18		7/18/18		7/18/18		7/18/18			
Propene	**45**		**63**		**4.1**		**4.3**		**0.92**	J	NA	NA
Freon12(Dichlorodifluoromethane)	**2.4**		**2.2**		**2.3**		**2.3**		**2.2**		3,500	15,000
Chloromethane (methyl chloride)	ND<0.33		ND<0.36		ND<0.33		ND<0.34		**0.31**	J	3,100	13,000
Freon 114 (1,2-Dichloro-1,1,2,2-tetrafluoroethane)	ND<0.84		ND<0.93		ND<0.84		ND<0.86		ND<1.0		NA	NA
Vinyl Chloride	**0.097**	J	**0.20**		ND<0.17		ND<0.17		ND<0.21		3.7	62
1,3-Butadiene	ND<0.34		ND<0.38		ND<0.35		ND<0.35		ND<0.43		3.1	14
Bromomethane	ND<0.33		**0.96**		ND<0.33		ND<0.34		ND<0.41		170	730
Chloroethane (ethyl chloride)	ND<0.33		ND<0.36		ND<0.33		ND<0.34		ND<0.41		350,000	1,500,000
Ethanol	**230**		**380**		**70**		**110**		**6.9**	J	NA	NA
Acetonitrile	**0.57**	J	**1.8**		**0.65**	J	**0.34**	J	**0.60**	J	2,100	8,800
Acrolein	**1.6**	J	**3.1**		**1.6**	J	**0.99**	J	**0.81**	J	0.7	2.9
Acetone	**160**		**120**		**94**		**74**		**13**		1,100,000	4,500,000
Trichlorofluoromethane (Freon 11)	**1.6**		**1.5**		**1.5**		**1.4**		**1.1**		NA	NA
Isopropyl Alcohol (2-Propanol)	**100**		**180**		**8.3**		**10**		**1.5**	J	7,000	29,000
Acrylonitrile	ND<0.87		**0.21**	J	ND<0.87		ND<0.89		ND<1.1		1.4	6.0
1,1-Dichloroethene	ND<0.18		ND<0.20		ND<0.18		ND<0.18		ND<0.23		7,000	29,000
2-Methyl-2-Propanol (tert-butyl Alcohol)	**1.8**		**17**		**1.8**	J	**0.60**	J	ND<2.3		NA	NA
Methylene Chloride	ND<0.87		ND<0.96		ND<0.87		ND<0.89		ND<1.1		3,400	41,000
3-Chloro-1-propene (Allyl Chloride)	ND<0.87		ND<0.96		ND<0.87		ND<0.89		ND<1.1		16	68
Trichlorotrifluoroethane	**0.45**	J	**0.50**	J	**0.49**	J	**0.51**	J	**0.43**	J	1,000,000	4,400,000
Carbon disulfide	**8.5**		**1.4**	J	**0.66**	J	**0.28**	J	ND<2.3		24,000	100,000
trans-1,2-Dichloroethene	ND<0.18		**0.22**		ND<0.18		ND<0.18		ND<0.23		NA	NA
1,1-Dichloroethane	ND<0.16		ND<0.18		ND<0.17		ND<0.17		ND<0.21		58	260
Methyl tert-Butyl Ether (MTBE)	ND<0.89		ND<0.98		ND<0.89		ND<0.91		ND<1.1		360	1,600
Vinyl Acetate	**3.8**	J	**6.1**	J	**2.6**	J	**2.5**	J	ND<11		7,000	29,000
Methyl Ethyl Ketone (2-butanone)	**3.8**		**5.8**		**3.8**		**2.6**		**2.7**		170,000	730,000
cis-1,2-Dichloroethene	ND<0.18		ND<0.20		ND<0.18		ND<0.18		ND<0.23		NA	NA
Diisopropyl Ether	ND<0.87		ND<0.96		ND<0.87		ND<0.89		ND<1.1		730	3,100
Ethyl Acetate	**2.0**		**2.3**		**1.2**		**0.54**	J	**1.7**	J	2,400	10,000
n-hexane	**0.43**	J	**0.95**	J	**0.18**	J	**0.26**	J	**0.25**	J	24,000	100,000
Chloroform	**0.49**		**1.1**		**1.4**		ND<0.18		ND<0.23		4.1	18
Tetrahydrofuran	**4.9**		**6.0**		**0.25**	J	**0.22**	J	ND<1.1		70,000	290,000
Ethyl tert-Butyl Ether	ND<0.87		ND<0.96		ND<0.87		ND<0.89		ND<1.1		NA	NA
1,2-Dichloroethane	**0.13**	J	ND<0.20		ND<0.18		ND<0.18		ND<0.23		3.6	16
1,1,1-Trichloroethane	ND<0.18		**0.16**	J	**0.13**	J	ND<0.18		ND<0.23		170,000	730,000
Isopropyl Acetate	ND<1.8		ND<2.0		ND<1.8		ND<1.8		ND<2.3		NA	NA
1-Butanol	**9.4**		**25**		**4.5**		**12**		**17**		NA	NA
Benzene	**0.54**		**0.78**		**1.2**		**0.19**		**0.25**		4.3	35
Carbon Tetrachloride	**0.42**		**0.34**		**20**		ND<0.18		**0.33**		16	68
Cyclohexane	ND<1.8		**0.34**	J	ND<1.8		ND<1.8		ND<2.3		35,000	150,000
tert-Amyl Methyl Ether	ND<0.87		ND<0.96		ND<0.87		ND<0.89		ND<1.1		NA	NA
1,2-Dichloropropane	ND<0.18		ND<0.20		ND<0.18		ND<0.18		ND<0.23		9.4	41
Bromodichloromethane	ND<0.18		ND<0.20		ND<0.18		ND<0.18		ND<0.23		2.5	11
Trichloroethene	ND<0.18		ND<0.20		ND<0.18		ND<0.18		ND<0.23		6.7	23
1,4-Dioxane (Dioxane)	ND<0.87		**2.1**		**0.62**	J	**0.41**	J	ND<1.1		19	82
2,2,4-Trimethylpentane (Isooctane)	**0.21**	J	**0.25**	J	ND<0.87		ND<0.89		ND<1.1		NA	NA
Methyl Methacrylate	ND<1.8		ND<2.0		ND<1.8		ND<1.8		ND<2.3		24,000	10,000
n-heptane	**0.41**	J	**0.83**	J	**0.17**	J	**0.28**	J	ND<1.1		NA	NA

Notes:
ND<X means compound not present above MRL indicated; J=estimated concentration less than the MRL but greater than or equal to the MDL.
IROCP = July 2017 Vermont DEC Investigation and Remediation of Contaminated Properties Rule
NA = Not Available (no guidance level)
Reporting limits in excess of or equal to DEC residential sub-slab soil gas screening values are shaded

Brownfields Phase II Environmental Site Assessment
Subslab Vapor Sampling Summary
Main and Congress Redevelopment Project

Analyte Category/Compound	Subslab-1 Concentration ug/m^3	Data Qualifier	Subslab-2 Reported Concentration ug/m^3	Data Qualifier	Subslab-3 Reported Concentration ug/m^3	Data Qualifier	Subslab-4 Reported Concentration ug/m^3	Data Qualifier	Ambient Air Reported Concentration ug/m^3 7/18/18	Data Qualifier	I-Rule VI Screening Values, Sub-Slab Soil Gas (residential, ug/m3)	I-Rule VI Screening Values, Sub-Slab Soil Gas (industrial, ug/m3)
cis-1,3-Dichloropropene	ND<0.92		ND<1.0		ND<0.92		ND<0.94		ND<1.1		NA	100
Methyl Isobutyl Ketone (4-methyl-2-Pentanone)	**1.6**		**4.6**		**1.9**		**0.33**	J	**0.19**	J	100,000	440,000
trans-1,3-Dichloropropene	ND<0.87		ND<0.96		ND<0.87		**0.23**	J	ND<1.1		NA	100
1,1,2-Trichloroethane	ND<0.18		ND<0.20		ND<0.18		ND<0.18		ND<0.23		5.8	26
Toluene	**4.3**		**4.2**		**2.1**		**1.1**		**0.83**	J	170,000	730,000
Methyl Butyl Ketone (2-Hexanone)	**0.60**	J	**0.96**	J	**0.52**	J	**0.34**	J	**0.39**	J	1,000	4,400
Dibromochloromethane	ND<0.18		ND<0.20		ND<0.18		ND<0.18		ND<0.23		NA	NA
1,2-Dibromoethane (ethylene dibromide)	ND<0.18		ND<0.20		ND<0.18		ND<0.18		ND<0.23		0.16	0.68
n-Butyl Acetate	**0.86**	J	**1.1**		**0.48**	J	**0.37**	J	ND<1.1		NA	NA
n-Octane	**0.92**		**1.2**		**0.44**	J	**0.37**	J	ND<1.1		NA	NA
Tetrachloroethene	ND<0.18		ND<0.20		**0.22**		**0.44**		**0.15**	J	21	170
Chlorobenzene	**0.13**	J	**0.16**	J	ND<0.87		ND<0.89		ND<1.1		1,700	7,300
Ethylbenzene	**1.4**		**1.6**		**1.0**		**0.77**	J	ND<1.1		37	160
m,p- Xylenes	**5.0**		**5.7**		**3.5**		**2.0**		**0.36**	J	3,500	15,000
Bromoform	ND<0.87		ND<0.96		ND<0.87		ND<0.89		ND<1.1		85	370
Styrene	**1.0**		**1.2**		**0.56**	J	**0.47**	J	ND<1.1		35,000	150,000
o- Xylenes	**2.1**		**2.5**		**1.6**		**0.83**	J	ND<1.1		3,500	15,000
n-Nonane	**2.4**		**2.3**		**0.72**	J	**0.83**	J	ND<1.1		700	2,900
1,1,2,2-Tetrachloroethane	ND<0.18		ND<0.20		ND<0.18		ND<0.18		ND<0.23		1.6	7.0
Isopropylbenzene (cumene)	**0.17**	J	**0.19**	J	ND<0.87		ND<0.89		ND<1.1		14,000	58,000
alpha-Pinene	**6.9**		**8.0**		**2.9**		**1.5**		**0.31**	J	NA	NA
n-propylbenzene	**0.43**	J	**0.51**	J	**0.31**	J	**0.24**	J	ND<1.1		35,000	150,000
3-Ethyltoluene	**1.3**		**1.6**		**0.96**		**0.74**		ND<1.1		NA	NA
4-Ethyltoluene	**0.59**	J	**0.71**	J	**0.46**	J	**0.36**	J	ND<1.1		NA	NA
1,3,5-Trimethylbenzene	**0.71**	J	**0.84**	J	**0.44**	J	**0.39**	J	ND<1.1		NA	NA
alpha-Methylstyrene	ND<0.85		ND<0.95		ND<0.86		ND<0.87		ND<1.1		NA	NA
2-Ethyltoluene	**0.50**	J	**0.59**	J	**0.34**	J	**0.31**	J	ND<1.1		NA	NA
1,2,4-Trimethylbenzene	**2.6**		**3.2**		**1.5**		**1.8**		**0.16**	J	240	1,000
n-Decane	**6.3**		**5.7**		**1.8**		**3.0**		**0.18**	J	NA	NA
Benzyl Chloride	ND<1.8		ND<2.0		ND<1.8		ND<1.8		ND<2.3		1.9	8.3
1,3-Dichlorobenzene	**2.2**		**3.4**		ND<0.89		ND<0.91		ND<1.1		NA	NA
1,4-Dichlorobenzene	ND<0.87		ND<0.96		ND<0.87		ND<0.89		ND<1.1		8.5	37
sec-Butylbenzene	ND<0.87		ND<0.96		ND<0.87		ND<0.89		ND<1.1		NA	NA
(4) p-Isopropyltoluene (p-Cymene)	**0.62**	J	**0.54**	J	**0.28**	J	**0.28**	J	ND<1.0		NA	NA
1,2,3-Trimethylbenzene	**0.72**	J	**0.90**	J	**0.36**	J	**0.56**	J	ND<1.0		5.2	22
1,2-Dichlorobenzene	ND<0.89		ND<0.98		ND<0.89		ND<0.91		ND<1.1		7,000	29,000
d-Limonene	**5.7**		**7.3**		**3.3**		**4.4**		**0.25**	J	NA	NA
1,2-Dibromo-3-Chloropropane	ND<0.87		ND<0.96		ND<0.87		ND<0.89		ND<1.1		0.0056	0.068
n-Undecane (hendecane)	ND<0.87		ND<0.96		ND<0.87		**3.6**		ND<1.1		NA	NA
1,2,4-Trichlorobenzene	ND<0.90		ND<1.0		ND<0.91		ND<0.92		ND<1.1		70	290
Naphthalene	**1.0**		**1.2**		**1.4**		**1.1**		ND<1.1		1.0	8.0
n-Dodecane	**2.6**		**3.4**		ND<0.87		**3.2**		**0.64**	J	NA	NA
Hexachlorobutadiene	ND<0.87		ND<0.96		ND<0.87		ND<0.89		ND<1.1		4.3	19
Cyclohexanone	**2.7**		**2.9**		**1.2**		**1.0**		**0.51**	J	730	3,100
tert-butylbenzene	ND<0.87		**0.41**	J	**0.20**	J	**0.24**	J	ND<1.1		NA	NA
n-Butylbenzene	ND<0.87		ND<0.96		ND<0.87		ND<0.89		ND<1.1		NA	NA
Total Reported VOCs	**634**		**891**		**249**		**253**		**53**			

Notes:
ND<X means compound not present above MRL indicated; J=estimated concentration less than the MRL but greater than or equal to the MDL.
IROCP = July 2017 Vermont DEC Investigation and Remediation of Contaminated Properties Rule
NA = Not Available (no guidance level)
Reporting limits in excess of or equal to DEC residential sub-slab soil gas screening values are shaded

Brownfields Phase II Environmental Site Assessment
Indoor Air Sampling Summary
Main and Congress Redevelopment Project

Analyte Category/Compound	IA-1 Concentration ug/m^3	Data Qualifier	IA-2 Reported Concentration ug/m^3	Data Qualifier	Ambient Air Reported Concentration ug/m^3	Data Qualifier	I-Rule Air Screening Levels (residential, ug/m3)	I-Rule Air Screening Levels (industrial, ug/m3)
Sample Date:	12/11/18		12/11/18		12/11/18			
Propene	**21**		**73**		ND<0.70		NA	NA
Freon12(Dichlorodifluoromethane)	**2.0**		**2.0**		**2.1**		100	440
Chloromethane (methyl chloride)	**0.39**		**0.42**		**0.43**		94	390
Freon 114 (1,2-Dichloro-1,1,2,2-tetrafluoroethane)	ND<0.68		ND<0.74		ND<0.68		NA	NA
Vinyl Chloride	ND<0.15		ND<0.16		ND<0.15		0.11	1.86
1,3-Butadiene	ND<0.28		ND<0.31		ND<0.28		0.094	0.41
Bromomethane	ND<0.27		ND<0.29		ND<0.27		5.2	22
Chloroethane (ethyl chloride)	ND<0.27		ND<0.29		ND<0.27		10,000	44,000
Ethanol	**44**		**200**		**3.3**	J	NA	NA
Acetonitrile	ND<0.69		ND<0.76		ND<0.70		63	260
Acrolein	**0.33**	J	**1.8**		**0.29**	J	0.021	0.088
Acetone	**140**		**1,100**	D	**3.8**	J	32,000	140,000
Trichlorofluoromethane (Freon 11)	**1.1**		**1.2**		**1.1**		NA	NA
Isopropyl Alcohol (2-Propanol)	**52**		**190**		**0.31**	J	210	880
Acrylonitrile	ND<0.69		ND<0.76		ND<0.70		0.041	0.18
1,1-Dichloroethene	ND<0.15		ND<0.16		ND<0.15		210	880
2-Methyl-2-Propanol (tert-butyl Alcohol)	ND<1.5		**0.55**	J	ND<1.5		NA	NA
Methylene Chloride	**0.36**	J	**0.25**	J	**0.25**	J	100	1,200
3-Chloro-1-propene (Allyl Chloride)	ND<0.70		NR		NR		0.47	2
Trichlorotrifluoroethane	**0.43**	J	**0.44**	J	**0.44**	J	NA	NA
Carbon disulfide	ND<1.5		ND<1.6		ND<1.5		730	3,100
trans-1,2-Dichloroethene	ND<0.15		ND<0.16		ND<0.15		NA	NA
1,1-Dichloroethane	ND<0.13		ND<0.15		ND<0.13		1.8	7.7
Methyl tert-Butyl Ether (MTBE)	ND<0.72		ND<0.79		ND<0.72		11	47
Vinyl Acetate	ND<7.0		**4.9**	J	**7.1**		210	880
Methyl Ethyl Ketone (2-butanone)	**0.75**	J	**2.3**		**0.29**		5,200	22,000
cis-1,2-Dichloroethene	ND<0.15		ND<0.16		ND<0.15		NA	NA
Diisopropyl Ether	ND<0.72		ND<0.72		NR		730	3,100
Ethyl Acetate	**10**		**74**		ND<1.5		73	310
n-hexane	**0.22**	J	**0.25**	J	**0.22**	J	730	3,100
Chloroform	**0.16**		**0.16**	J	ND<0.15		0.12	0.53
Tetrahydrofuran	**0.69**		**2.1**		ND<0.71		2,100	8,800
Ethyl tert-Butyl Ether	ND<0.70		NR		NR		NA	NA
1,2-Dichloroethane	**0.11**	J	**0.15**	J	ND<0.15		0.11	0.47
1,1,1-Trichloroethane	ND<0.15		ND<0.16		ND<0.15		5,200	22,000
Isopropyl Acetate	**0.30**	J	NR		NR		NA	NA
1-Butanol	**2.7**		NR		NR		NA	NA
Benzene	**0.46**		**0.47**		**0.64**		0.13	1.05
Carbon Tetrachloride	**0.38**		**0.37**		**0.39**		0.47	2.0
Cyclohexane	ND<1.3		**0.27**	J	ND<1.3		6,300	26,000
tert-Amyl Methyl Ether	ND<0.72		NR		NR		NA	NA
1,2-Dichloropropane	ND<0.15		ND<0.16		ND<0.15		0.28	1.2
Bromodichloromethane	ND<0.15		ND<0.16		ND<0.15		0.076	0.33
Trichloroethene	ND<0.15		ND<0.16		ND<0.15		0.2	0.70
1,4-Dioxane (Dioxane)	ND<0.70		ND<0.77		ND<0.71		0.56	2.5
2,2,4-Trimethylpentane (Isooctane)	ND<0.70		NR		NR		NA	NA
Methyl Methacrylate	ND<1.5		ND<1.6		ND<1.5		730	3,100
n-heptane	**0.17**	J	**0.23**	J	**0.25**	J	NA	NA

Notes:
ND<X means compound not present above MRL indicated; J=estimated concentration less than the MRL but greater than or equal to the MDL.
IROCP = July 2017 Vermont DEC Investigation and Remediation of Contaminated Properties Rule
NA = Not Available (no guidance level)
NR = Not Reported
Contaminant detections indicated in **bold**. Exceedances of the DEC residential air screening values are shaded
Reporting limits in excess of or equal to DEC residential sub-slab soil gas screening values are shaded

Brownfields Phase II Environmental Site Assessment
Indoor Air Sampling Summary
Main and Congress Redevelopment Project

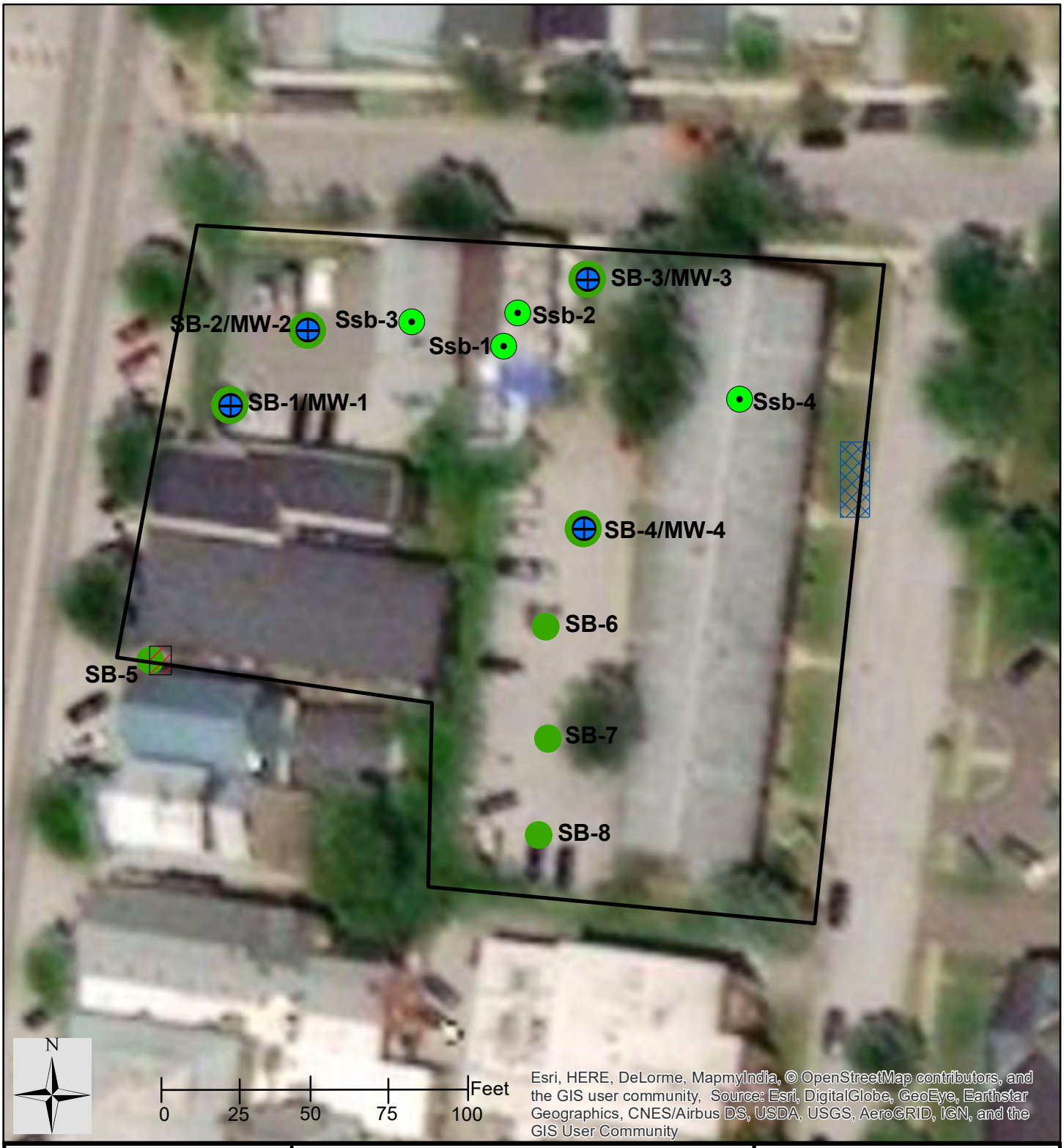
Analyte Category/Compound	IA-1 Concentration ug/m^3	Data Qualifier	IA-2 Reported Concentration ug/m^3	Data Qualifier	Ambient Air Reported Concentration ug/m^3	Data Qualifier	I-Rule Air Screening Levels (residential, ug/m3)	I-Rule Air Screening Levels (industrial, ug/m3)
Sample Date:	12/11/18		12/11/18		12/11/18			
cis-1,3-Dichloropropene	ND<0.74		ND<0.82		ND<0.75		0.7	3.1
Methyl Isobutyl Ketone (4-methyl-2-Pentanone)	ND<0.70		ND<0.77		ND<0.71		3,100	13,000
trans-1,3-Dichloropropene	ND<0.70		ND<0.77		ND<0.71		0.7	3.1
1,1,2-Trichloroethane	ND<0.15		ND<0.16		ND<0.15		0.18	0.77
Toluene	**0.73**		**0.54**	**J**	**0.47**	**J**	5,200	22,000
Methyl Butyl Ketone (2-Hexanone)	ND<0.72		**0.20**	**J**	ND<0.72		31	130
Dibromochloromethane	ND<0.15		ND<0.16		ND<0.15		NA	NA
1,2-Dibromoethane (ethylene dibromide)	ND<0.15		ND<0.16		ND<0.15		0.0047	0.02
n-Butyl Acetate	**5.5**		**23**		ND<0.72		NA	NA
n-Octane	ND<0.72		ND<0.79		ND<0.72		NA	NA
Tetrachloroethene	ND<0.15		ND<0.16		ND<0.15		0.63	5.11
Chlorobenzene	ND<0.70		ND<0.77		ND<0.71		52	220
Ethylbenzene	**0.12**	**J**	ND<0.76		ND<0.70		1.1	4.9
m,p- Xylenes	**0.33**	**J**	**0.23**	**J**	**0.28**	**J**	100	440
Bromoform	ND<0.70		ND<0.77		ND<0.71		2.6	11
Styrene	**0.18**	**J**	ND<0.77		ND<0.71		1,000	4,400
o- Xylenes	**0.14**	**J**	ND<0.77		**0.11**	**J**	100	440
n-Nonane	**0.14**	**J**	**0.14**	**J**	ND<0.72		21	88
1,1,2,2-Tetrachloroethane	ND<0.15		ND<0.16		ND<0.15		0.048	0.21
Isopropylbenzene (cumene)	ND<0.70		ND<0.77		ND<0.71		420	1,800
alpha-Pinene	**1.7**		**0.29**	**J**	ND<0.70		NA	NA
n-propylbenzene	ND<0.72		ND<0.79		ND<0.72		1,000	4,400
3-Ethyltoluene	ND<0.70		NR		NR		NA	NA
4-Ethyltoluene	ND<0.70		ND<0.77		ND<0.71		NA	NA
1,3,5-Trimethylbenzene	ND<0.70		ND<0.77		ND<0.71		NA	NA
alpha-Methylstyrene	ND<0.70		NR		NR		NA	NA
2-Ethyltoluene	ND<0.72		NR		NR		NA	NA
1,2,4-Trimethylbenzene	**0.16**	**J**	ND<0.77		**0.10**	**J**	7.3	31
n-Decane	**0.16**	**J**	NR		NR		NA	NA
Benzyl Chloride	ND<1.5		ND<1.6		ND<1.5		0.057	0.25
1,3-Dichlorobenzene	ND<0.72		ND<0.79		ND<0.72		NA	NA
1,4-Dichlorobenzene	ND<0.72		ND<0.79		ND<0.72		0.26	1.1
sec-Butylbenzene	ND<0.70		NR		NR		NA	NA
(4) p-Isopropyltoluene (p-Cymene)	**0.18**	**J**	NR		NR		NA	NA
1,2,3-Trimethylbenzene	ND<0.69		NR		NR		5.2	22
1,2-Dichlorobenzene	ND<0.72		ND<0.79		ND<0.72		210	880
d-Limonene	**0.81**		ND<074		ND<0.68		NA	NA
1,2-Dibromo-3-Chloropropane	ND<0.69		ND<0.76		ND<0.70		0.00017	0.002
n-Undecane (hendecane)	**0.19**	**J**	NR		NR		NA	NA
1,2,4-Trichlorobenzene	ND<0.70		ND<0.77		ND<0.71		2.1	8.8
Naphthalene	ND<0.68		ND<074		ND<0.68		0.03	0.24
n-Dodecane	ND<0.69		NR		NR		NA	NA
Hexachlorobutadiene	ND<0.70		ND<0.77		ND<0.71		0.13	0.56
Cyclohexanone	**0.17**	**J**	NR		NR		730	3,100
tert-butylbenzene	ND<0.70		NR		NR		NA	NA
n-Butylbenzene	ND<0.70		NR		NR		NA	NA
Total Reported VOCs	**288**		**1,679**		**22**			

Notes:
ND<X means compound not present above MRL indicated; J=estimated concentration less than the MRL but greater than or equal to the MDL.
IROCP = July 2017 Vermont DEC Investigation and Remediation of Contaminated Properties Rule
NA = Not Available (no guidance level)
NR = Not Reported
Contaminant detections indicated in **bold**. Exceedances of the DEC residential air screening values are shaded
Reporting limits in excess of or equal to DEC residential air screening values are shaded

Brownfields Phase II Environmental Site Assessment
Groundwater Sampling Data Summary
Main and Congress Street
St. Albans, Vermont

Groundwater Sample *Sample Date*	*MW-1* *12/11/18*	*Duplicate* *12/11/18*	VGES
TOTAL METALS, EPA Method 200.8 (mg/l)			
Total Arsenic	ND<0.001	ND<0.001	0.010
Total Barium	**0.14**	**0.14**	2
Total Cadmium	ND<0.001	ND<0.001	0.005
Total Chromium	ND<0.001	ND<0.001	0.100
Total Lead	ND<0.001	ND<0.001	0.015
Total Mercury	ND<0.0001	ND<0.0001	0.002
Total Selenium	**0.025**	**0.026**	0.05
Total Sliver	ND<0.001	ND<0.001	0.1

Groundwater Enforcement Standard from Groundwater Protection Rule and Strategy, 12/16
ND<xx = Not Detected< Detection Limit
Results reported above detection limits are indicated in bold
Detection limits and reported concentrations or above the enforcement standard are shaded
NA = No current enforcement standard

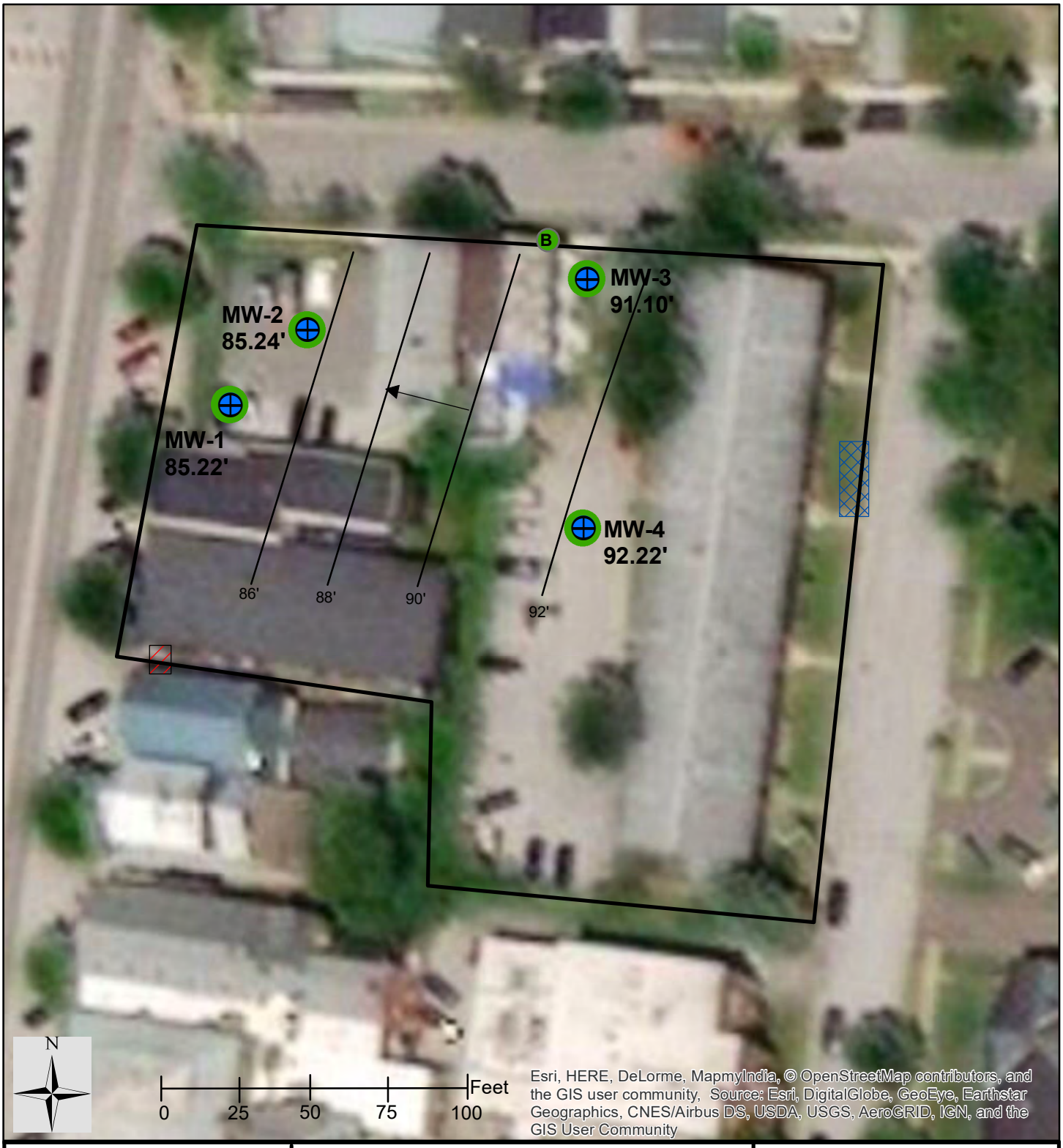


LEE
LE·Environmental
21 North Main Street Unit #1
Waterbury, Vermont
Phone: 802-917-2001
www.leenv.net

Site Map
Congress and Main Redevelopment Project
St. Albans, Vermont

Legend
- SB-X: Soil Boring
- GW-X: GW Well
- Ssb-X: SS Vapor Point
- Former Gasoline UST
- Former Fuel Oil UST (closed in-place)

Drawing Date: 9/12/18
LEE Project #: 18-112



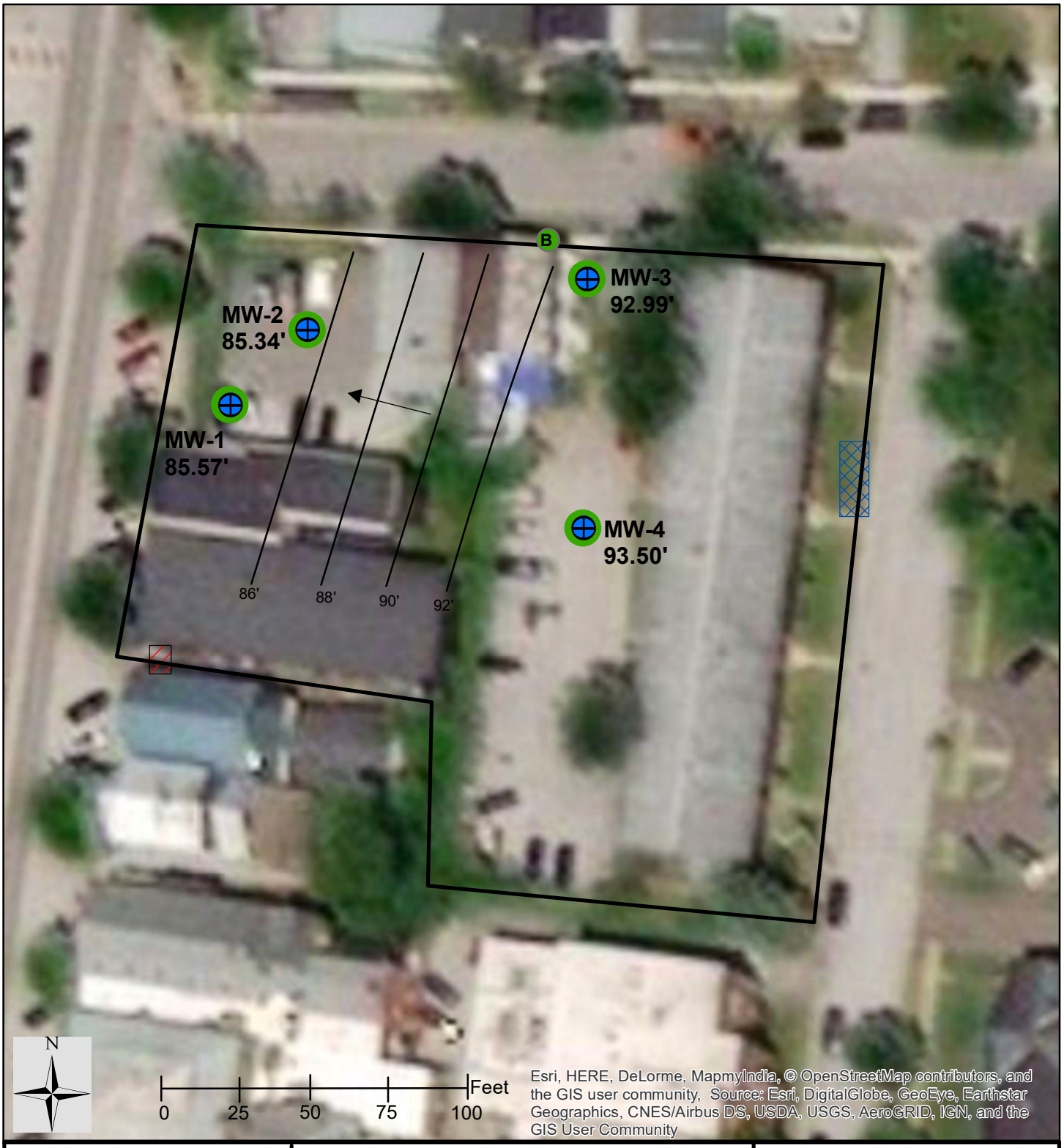
LEE
LE·Environmental
21 North Main Street Unit #1
Waterbury, Vermont
Phone: 802-917-2001
www.leenv.net

Groundwater Contour Map
Congress and Main Redevelopment Project
St. Albans, Vermont

LEE #18-112

Legend
- Monitoring Well with GW elevations measured in feet
- Arrow indicates estimated groundwater flow direction
- B Benchmark 100'

Measure Date: 7/18/18
Drawing Date: 9/12/18



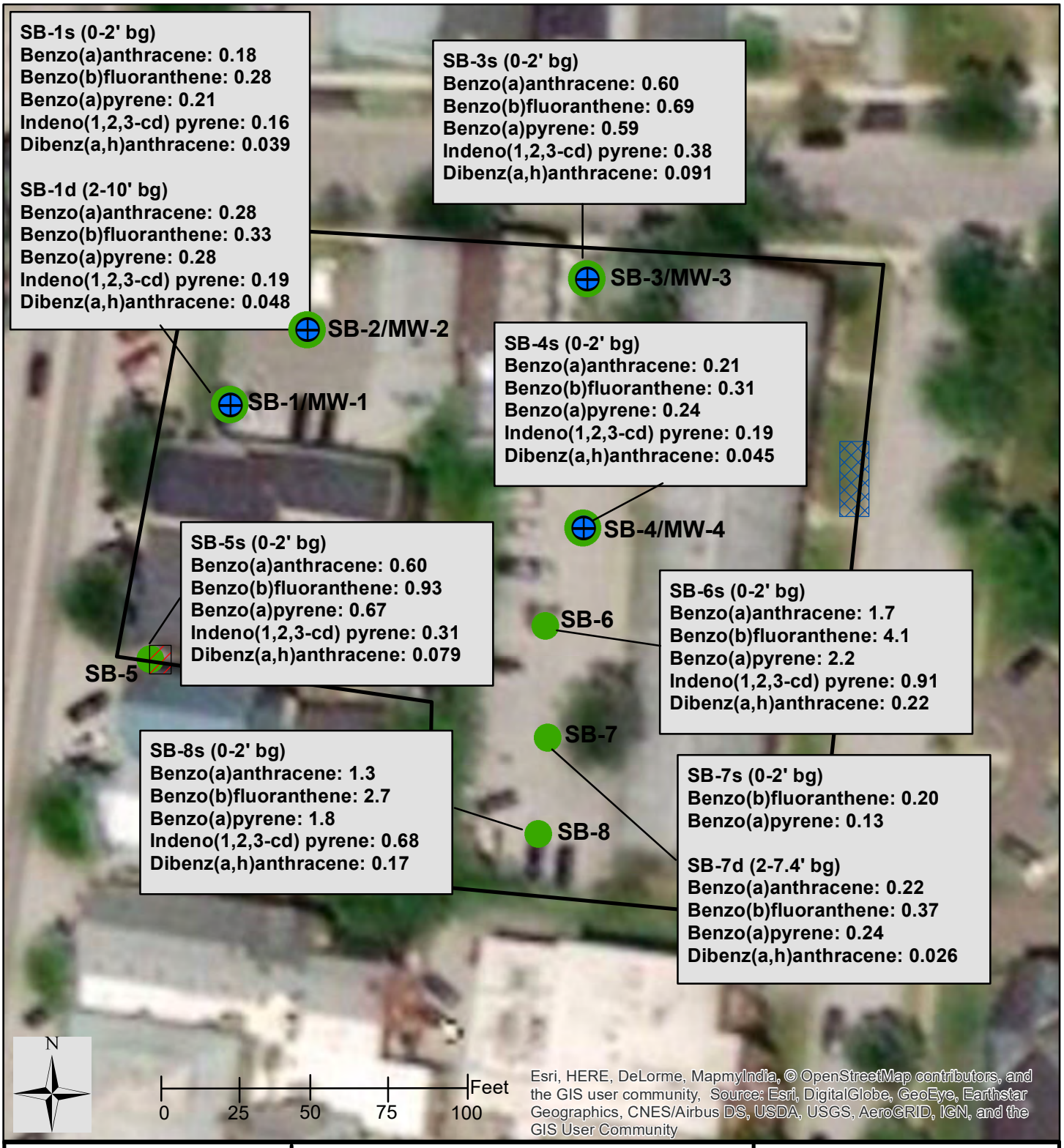
LEE
LE·Environmental
21 North Main Street Unit #1
Waterbury, Vermont
Phone: 802-917-2001
www.leenv.net

Groundwater Contour Map
Congress and Main Redevelopment Project
St. Albans, Vermont

LEE #18-112

Legend
- Monitoring Well with GW elevations measured in feet
- Arrow indicates estimated groundwater flow direction
- B Benchmark 100'

Measure Date: 12/11/18
Drawing Date: 1/8/19



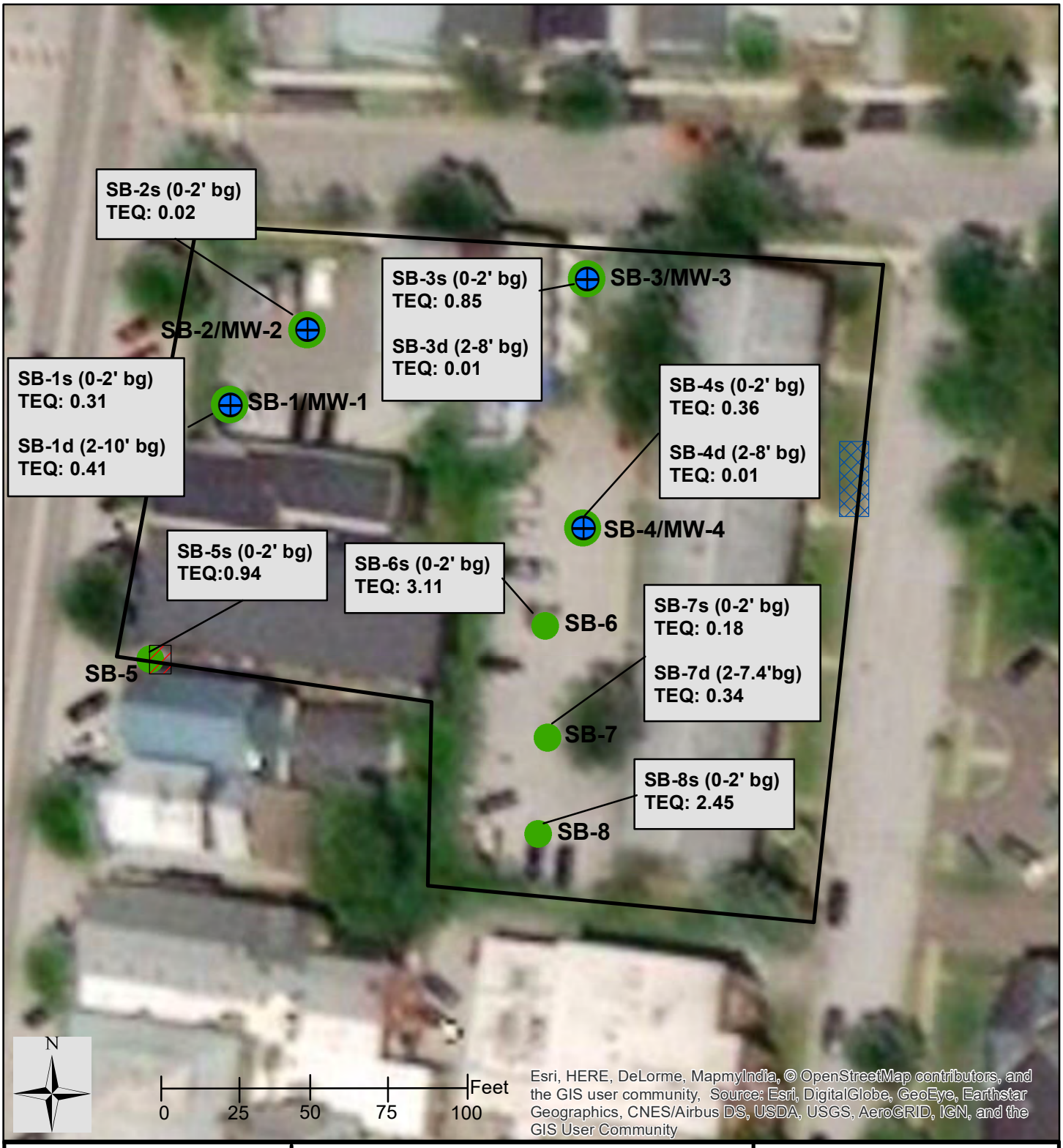
LEE
LE·Environmental
21 North Main Street Unit #1
Waterbury, Vermont
Phone: 802-917-2001
www.leenv.net

Soil Contaminant Map-PAHs
Congress and Main Redevelopment Project
St. Albans, Vermont

Legend

● Soil boring/soil sample with PAH concentrations exceeding residential standards reported in (mg/kg)

Sample Date: 7/9/18
Drawing Date: 9/12/18
LEE Project # 18-112



LEE
LE·Environmental
21 North Main Street Unit #1
Waterbury, Vermont
Phone: 802-917-2001
www.leenv.net

Soil Contaminant Map- B[a]P TEQ
Congress and Main Redevelopment Project
St. Albans, Vermont

Legend

● Soil boring/soil sample with B[a]P TEQ concentrations reported in (mg/kg)

Sample Date: 7/9/18
Drawing Date: 9/12/18
LEE Project # 18-112

LEE
LE·Environmental
21 North Main Street Unit #1
Waterbury, Vermont
Phone: 802-917-2001
www.leenv.net

Soil Contaminant Map-Metals
Congress and Main Redevelopment Project
St. Albans, Vermont

Legend

● Soil boring/soil sample with contaminant concentrations exceeding residential standards reported in (mg/kg)

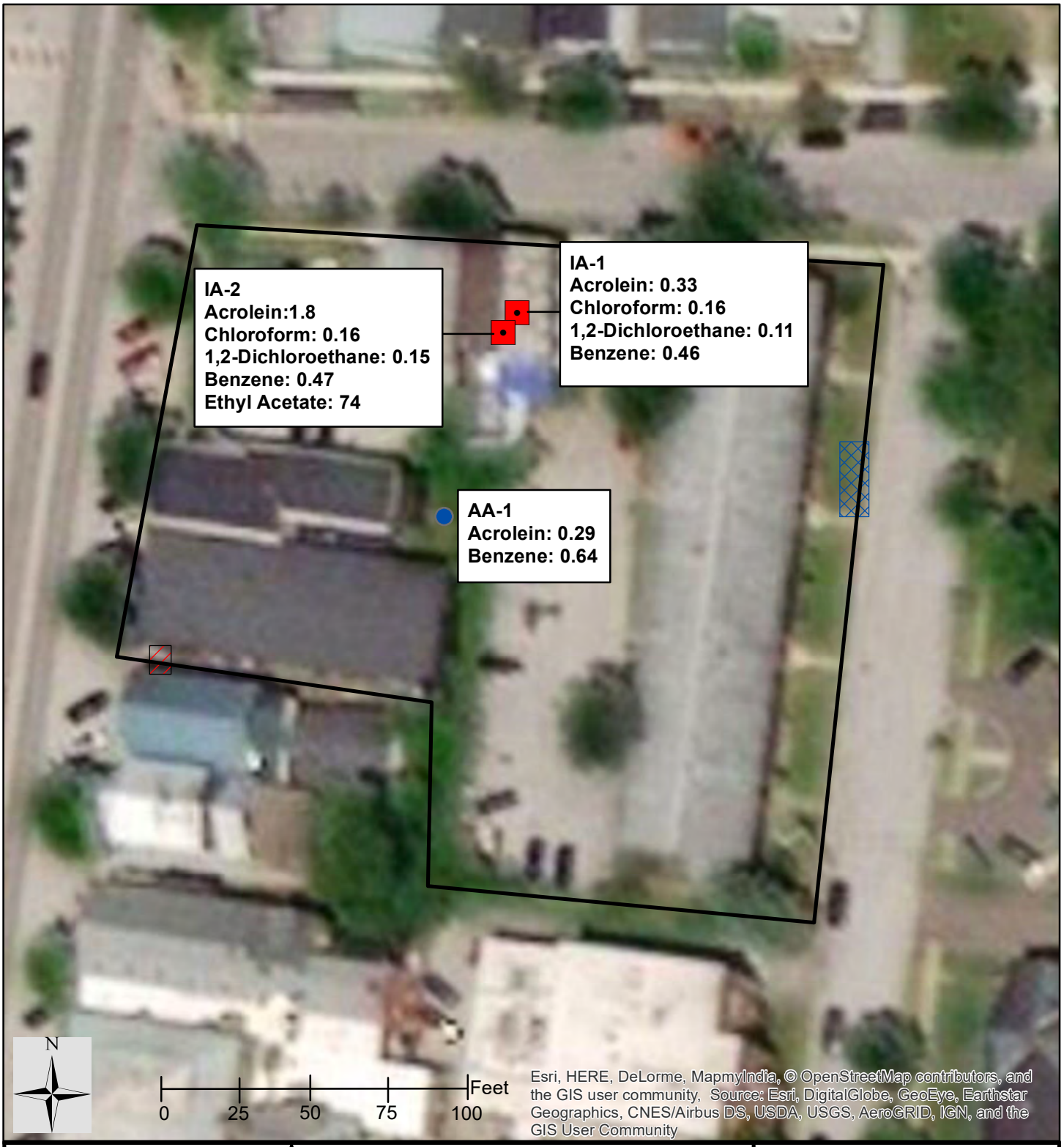
Sample Date: 7/9/18
Drawing Date: 9/12/18
LEE Project # 18-112

LE·Environmental
21 North Main Street Unit #1
Waterbury, Vermont
Phone: 802-917-2001
www.leenv.net

Sub-Slab Soil Vapor Contaminant Map Congress and Main Redevelopment Project St. Albans, Vermont

Legend
- Subslab Soil Gas Sample
- Ambient Air Sample (concentrations in ug/m3) Residential Screening Value exceedances noted
- Former Gasoline UST
- Former Fuel Oil UST

Sample Date: 7/18/18
Drawing Date: 9/12/18



LE·Environmental
21 North Main Street Unit #1
Waterbury, Vermont
Phone: 802-917-2001
www.leenv.net

Indoor Air Contaminant Map Congress and Main Redevelopment Project St. Albans, Vermont

Legend
- Indoor Air Sample
- Ambient Air Sample (concentrations in ug/m3) Residential Screening Value exceedances noted
- Former Gasoline UST
- Former Fuel Oil UST

Sample Date: 12/11/18
Drawing Date: 1/8/19