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

Joe Martens
Commissioner

November 17, 2014

Mr. Ricky A. Ryan, P.E.
Senior Principal Project Manager
AMEC Environment & Infrastructure, Inc
9725 Cogdill Road
Knoxville, TN 37932

Dear Mr. Ryan:

Subject: Former Taylor Instruments Site, Site #V00144-8
Addendum to Work Plan for Sub-Slab Vapor and Indoor Air Sampling Event
- Residence at 80 Ames Street, Rochester, New York
October 27, 2014

The New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health, collectively referred to as the State, have completed their review of the document entitled *"Addendum to Work Plan for Sub-Slab Vapor and Indoor Air Sampling Event- Residence at 80 Ames Street, Rochester, New York"* (the Work Plan) dated October 27, 2014 for the Former Taylor Instruments Site. The State has determined that the Work Plan, with modifications, substantially addresses the requirements of the Voluntary Cleanup Agreement. The modifications are outlined as follows:

- The current sub-slab depressurization system will be turned off for a minimum of 60 days prior to soil vapor intrusion sampling;
- The current sub-slab depressurization system will be turned back on as soon as the samples have been collected;
- The sampling report will include a Data Usability Summary Report;
- The sampling report will be submitted as both a bound hardcopy (with data packages inserted on a CD) and as a single, searchable Adobe Acrobat© pdf file; and
- The data will also be submitted as an electronic data deliverable in a format acceptable to NYSDEC.

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

Please contact me at 585-226-5357 if you have any questions.

Sincerely,

Frank Sowers

Frank Sowers, P.E.
Environmental Engineer 2

ec:
B. Putzig
A. DeMarco
J. Frazer
J. McCreary
M. Christopher
J. Deatherage

October 27, 2014

Mr. Frank Sowers
Project Manager
New York State Department of Environmental Conservation
Division of Environmental Remediation
6274 East Avon-Lima Road
Avon, NY 14414-9519

Subject: **Addendum to Work Plan for Sub-Slab Vapor and Indoor Air Sampling Event - Residence at 80 Ames Street, Rochester, New York**
Former Taylor Instruments Site
Voluntary Cleanup Agreement Index B8-0508-97-02
AMEC Project Number 3031052006.31

Dear Mr. Sowers:

On behalf of ABB, Inc. (ABB), formerly Combustion Engineering, AMEC Environment & Infrastructure Inc., (AMEC) is submitting this addendum to the *Work Plan for Sub-Slab Vapor and Indoor Air Investigation* (MACTEC Engineering and Consulting, Inc. [MACTEC], 2009) to detail a proposed additional sub-slab vapor and indoor air sampling event at one residence near the Former Taylor Instruments Site (the Site) located at 95 Ames Street in Rochester, New York. The purpose of this additional sampling event is to determine whether selected volatile organic compounds (VOCs) contaminants of concern (COCs) [i.e., tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2 dichloroethene (DCE), and vinyl chloride (VC)] are present at levels warranting continued sub-slab vapor mitigation at a residence located at 80 Ames Street which is adjacent to the Site. If the sampling event indicates that continued vapor mitigation is not warranted, AMEC will request termination of the operating sub slab depressurization (SSD) system as discussed in a July 23, 2014 telephone conversation between Mr. Joe Deatherage of AMEC and Mr. Frank Sowers of New York State Department of Environmental Conservation (NYSDEC) (NYSDEC, 2014).

BACKGROUND

During 2010 and 2011, sub-slab vapor and indoor air (SSIA) investigations were performed at eight residences near the Site, i.e., 64, 70, and 80 Ames Street; 195, 215, and 216 Danforth Street; and 7 and 15 Lynchford Park Drive. The results of the SSIA sampling were compared to the New York State Department of Health (NYSDOH) Soil Vapor/Indoor Air Matrix Tables and indicated that only the TCE results for the residence at 80 Ames Street warranted further monitoring or mitigation. No further action was warranted for the remaining COCs. The 80 Ames Street residence is shown on the attached figure (Attachment A). Additionally, it should

Correspondence:
AMEC Environment & Infrastructure, Inc.
9725 Cogdill Road
Knoxville, Tennessee 37932
Tel (865) 671-6774
Fax (865) 671-6254
amec.com

be noted that no direct evidence that the selected VOCs were travelling from the Site onto adjacent residential properties was obtained during the SSIA investigation.

As detailed in AMEC's *Vapor Mitigation Measure Work Plan* (MACTEC, 2010a), ABB elected to install an SSD system in the basement of the 80 Ames Street duplex as a precautionary measure. Since the 80 Ames Street/215 Danforth Street duplex shares the same basement slab, the SSD system also encompasses the 215 Danforth Street basement.

The SSD system was installed on September 14 and 15, 2010 to meet the requirements of the NYSDOH Guidance (NYSDOH, 2006), and the installation was detailed in AMEC's *Construction Completion Report* (MACTEC, 2010b). In accordance with Section 4.4.1 of the NYSDOH Guidance (NYSDOH, 2006), the installing subcontractor has performed annual inspections of the SSD system since installation to ensure continued proper operation.

More recently, in overburden monitoring well TW-04, which is located on the Former Taylor Instruments Site, across the street from the SSD system (see Figure in Attachment A), TCE has been non-detect (<1 micrograms per liter [µg/L]) for the last four semi-annual sampling events. Therefore, it appears TCE is no longer present in the Site groundwater immediately upgradient of the 80 Ames Street duplex. Based on these results for TW-04, AMEC proposes the additional sampling event described herein to determine if continued operation of the SSD system as precautionary measure is still warranted.

PROPOSED SUB-SLAB VAPOR AND INDOOR AIR SAMPLING

To assess whether COCs in SSIA remain present at levels warranting continued monitoring or sub-slab vapor mitigation, AMEC proposes an additional sampling event at the 80 Ames Street residence. The targeted sampling approach for the residence will include:

- Completion of the NYSDOH Indoor Air Quality Questionnaire and Building Inventory (Attachment B),
- Collection of one sub-slab vapor sample from beneath the basement slab,
- Collection of one basement indoor air sample, and
- Collection of an outdoor ambient air sample during the indoor sampling event for comparison to the indoor air sample.

SSD System Operation

Subject to a written access agreement from the property owner of the duplex, the SSD system will be temporarily turned off for 30 to 60 days prior to sampling as requested by the NYSDEC (NYSDEC, 2014).

Pre-Sampling Inspection and Collection of Samples

A pre-sampling inspection will be conducted prior to the collection of the samples. One sub-slab vapor sample and one indoor air sample will be collected from the 80 Ames Street residence basement. The pre-sampling inspection and sample collection procedures will follow those detailed in the *Work Plan for Sub-Slab Vapor and Indoor Air Investigation* (MACTEC, 2009).

Quality Assurance

Concurrent with sub-slab vapor and indoor air sample collection, an outdoor air sample will be collected as detailed in the original Work Plan (MACTEC, 2009). One duplicate indoor air sample will also be collected to assess precision of sampling methods as well as laboratory data. The duplicate sample will be collected in accordance with the indoor air sampling procedures.

For all samples, pertinent information including the time of sample collection, starting and ending canister vacuum, photoionization detector measurements, etc., will be recorded in a field log book and on air sampling record forms (Attachment C).

Laboratory Analytical Testing and Results

Vacuum measurements will be recorded for each sample canister upon receipt by the project laboratory and will be reviewed along with the analytical data. All vapor samples will be submitted to Con-Test Analytical Laboratory under chain-of-custody protocol for analyses of four contaminants of concern (COCs) using United States Environmental Protection Agency (EPA) Method TO-15. The selected VOCs are the Site COCs, as follows:

- PCE;
- TCE;
- Cis-1,2-DCE; and
- VC.

For undiluted samples using EPA Method TO-15 for VOCs, Con-Test has standard reporting limits of 1 microgram per cubic meter ($\mu g/m^3$) for sub-slab vapor and 0.25 $\mu g/m^3$ for indoor air and outdoor ambient air. Con-Test will provide a Category B deliverable as defined in the NYSDEC *Analytical Services Protocol* (NYSDEC, 2005). The analytical results will be used in conjunction with the Soil Vapor/Indoor Air Matrix Tables in the NYSDOH 2006 Guidance document (NYSDOH, 2006) to aid in the assessment of soil vapor intrusion at the residence. TCE and VC concentrations will be evaluated by using Matrix 1 guidance values, while PCE and cis-1,2-DCE will be evaluated using Matrix 2 guidance values.

SAMPLING EVENT REPORT

Upon completion of the field program and receipt of analytical data, AMEC will prepare a sampling event report. The report will document the field activities completed, provide results of the laboratory analysis, and provide conclusions and recommendations. If the investigation indicates that operation of the SSD system is not warranted, AMEC will include a request for termination of the SSD system. Copies of field sampling records, the NYSDOH questionnaire, photographs of sampling locations, and laboratory analytical data will be included as appendices to the report.

ACCESS AGREEMENTS

Prior to initiation of field activities, AMEC will obtain an appropriate access agreement. Once the signed access agreement is obtained, AMEC will schedule the sampling activities with the owner and/or resident. AMEC acknowledges the NYSDOH preference for the sampling to occur between mid-November and March and will notify both the NYSDEC and the NYSDOH at least two weeks prior to our sampling activities.

CLOSING

Mr. Sowers, we appreciate your consideration of our proposed additional sub-slab vapor and indoor air sampling event. Following approval of this work plan, AMEC will commence with the efforts to secure access agreements and schedule the sampling. Should you have any questions, please contact me at (865) 671-6774 (ext. 1113), or via email at ricky.ryan@amec.com.

Sincerely,

AMEC Environment & Infrastructure, Inc.

Ricky A. Ryan, P.E.
Senior Principal Project Manager

K. Joe Deatherage
Senior Environmental Engineer

Enclosures

cc: Jean McCreary, Nixon Peabody LLP (w/ electronic enclosure)
Robert H. Fetter, Thermo Fisher Scientific (w/ electronic enclosure)
Melody Christopher, ABB (w/ 1 hard copy + electronic enclosure)
Nelson Walter, AMEC (w/o enclosure [*electronic*])

REFERENCES

MACTEC, 2009. *Work Plan for Sub-Slab Vapor and Indoor Air Investigation Residences near the Former Taylor Instruments Site: 64, 70, and 80 Ames Street and 215 and 216 Danforth Street, Former Taylor Instruments Site, Rochester, New York.* Prepared for the New York State Department of Environmental Conservation. December 23.

MACTEC, 2010a. *Vapor Mitigation Measure Work Plan for 80 Ames Street and 215 Danforth Street, Former Taylor Instruments Site, Rochester, New York.* Prepared for ABB, Inc. July.

MACTEC, 2010b. *Construction Completion Report, Former Taylor Instruments Site, Rochester, New York.* Prepared for ABB, Inc. December.

NYSDEC, 2005. *Analytical Services Protocols.* Prepared by the New York State Department of Environmental Conservation. July.

NYSDEC, 2014. Telephone conversation between Mr. Joe Deatherage of AMEC Environment & Infrastructure and Mr. Frank Sowers of the New York State Department of Environmental Conservation. July 23.

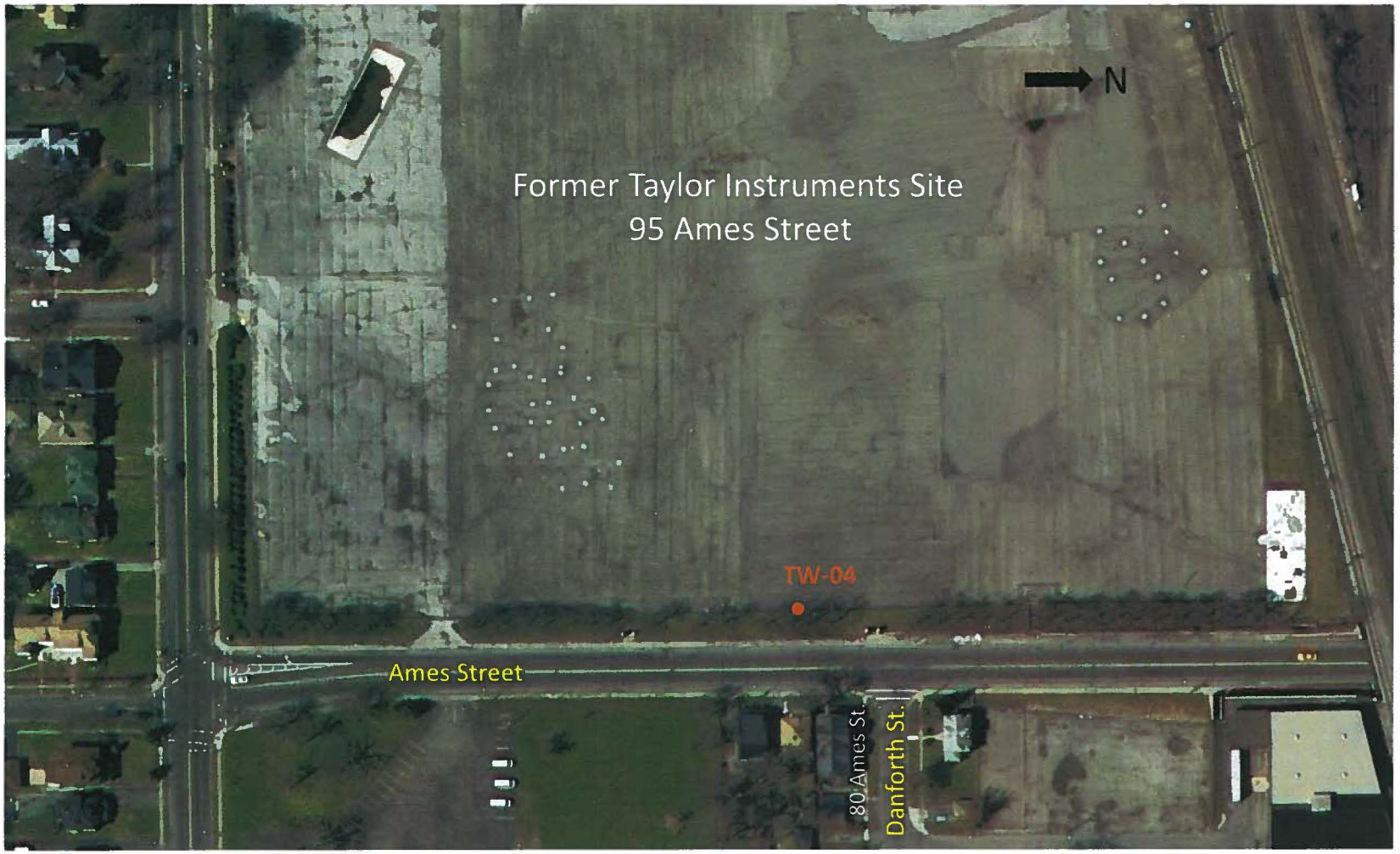
NYSDOH, 2006. *Guidance for Evaluating Soil Vapor Intrusion in the State of New York.* Prepared by the New York State Department of Health. October.

ACRONYMS

µg/L	micrograms per liter
$\mu g/m^3$	micrograms per cubic meter
ABB	ABB, Inc.
AMEC	AMEC Environment & Infrastructure, Inc.
COC	contaminant of concern
DCE	cis-1,2-dichloroethene
EPA	Environmental Protection Agency (United States)
MACTEC	MACTEC Engineering and Consulting, Inc.
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PCE	tetrachloroethene
Site	Former Taylor Instruments Site
SSIA	sub-slab and indoor air
SSD	sub-slab depressurization
TCE	trichloroethene
VC	vinyl chloride
VOC	volatile organic compound

ATTACHMENT A

FIGURE



amec

AMEC Environment & Infrastructure, Inc.
9725 Cogdill Road
Knoxville, TN 37932

Proposed Sub-Slab Vapor and Indoor Air Sampling
Residence at 80 Ames Street

Former Taylor Instruments Site
Rochester, New York

Project: 3031052006

Prepared by: CWP
Checked by: KJD

ATTACHMENT B

NYSDOH INDOOR AIR QUALITY QUESTIONNAIRE AND BUILDING INVENTORY

NEW YORK STATE DEPARTMENT OF HEALTH
INDOOR AIR QUALITY QUESTIONNAIRE AND BUILDING INVENTORY
CENTER FOR ENVIRONMENTAL HEALTH

This form must be completed for each residence involved in indoor air testing.

Preparer's Name _____ Date/Time Prepared _____

Preparer's Affiliation _____ Phone No._____

Purpose of Investigation_____

1. OCCUPANT:

Interviewed: Y / N

Last Name: _____ First Name: _____

Address: _____

County: _____

Home Phone: _____ Office Phone: _____

Number of Occupants/persons at this location _____ Age of Occupants _____

2. OWNER OR LANDLORD: (Check if same as occupant ___)

Interviewed: Y / N

Last Name: _____ First Name: _____

Address: _____

County: _____

Home Phone: _____ Office Phone: _____

3. BUILDING CHARACTERISTICS

Type of Building: (Circle appropriate response)

Residential	School	Commercial/Multi-use
Industrial	Church	Other: _____

If the property is residential, type? (Circle appropriate response)

Ranch	2-Family	3-Family
Raised Ranch	Split Level	Colonial
Cape Cod	Contemporary	Mobile Home
Duplex	Apartment House	Townhouses/Condos
Modular	Log Home	Other:_____

If multiple units, how many? _____

If the property is commercial, type?

Business Type(s) _____

Does it include residences (i.e., multi-use)? Y / N If yes, how many? _____

Other characteristics:

Number of floors_____ Building age_____

Is the building insulated? Y / N How air tight? Tight / Average / Not Tight

4. AIRFLOW

Use air current tubes or tracer smoke to evaluate airflow patterns and qualitatively describe:

Airflow between floors

_____

_____

_____

Airflow near source

_____

_____

_____

Outdoor air infiltration

_____

_____

_____

Infiltration into air ducts

_____

_____

_____

5. BASEMENT AND CONSTRUCTION CHARACTERISTICS (Circle all that apply)

a. Above grade construction:	wood frame	concrete	stone	brick
b. Basement type:	full	crawlspace	slab	other _____
c. Basement floor:	concrete	dirt	stone	other _____
d. Basement floor:	uncovered	covered	covered with _____	
e. Concrete floor:	unsealed	sealed	sealed with _____	
f. Foundation walls:	poured	block	stone	other _____
g. Foundation walls:	unsealed	sealed	sealed with _____	
h. The basement is:	wet	damp	dry	moldy
i. The basement is:	finished	unfinished	partially finished	
j. Sump present?	Y / N			
k. Water in sump?	Y / N / not applicable			

Basement/Lowest level depth below grade: _____(feet)

Identify potential soil vapor entry points and approximate size (e.g., cracks, utility ports, drains)

_____

_____

6. HEATING, VENTING and AIR CONDITIONING (Circle all that apply)

Type of heating system(s) used in this building: (circle all that apply – note primary)

Hot air circulation	Heat pump	Hot water baseboard	
Space Heaters	Stream radiation	Radiant floor	
Electric baseboard	Wood stove	Outdoor wood boiler	Other _____

The primary type of fuel used is:

Natural Gas	Fuel Oil	Kerosene
Electric	Propane	Solar
Wood	Coal	

Domestic hot water tank fueled by: _____

Boiler/furnace located in:	Basement	Outdoors	Main Floor	Other_____
Air conditioning:	Central Air	Window units	Open Windows	None

Are there air distribution ducts present? Y / N

Describe the supply and cold air return ductwork, and its condition where visible, including whether there is a cold air return and the tightness of duct joints. Indicate the locations on the floor plan diagram.

_____

_____

_____

_____

7. OCCUPANCY

Is basement/lowest level occupied? Full-time Occasionally Seldom Almost Never

Level	**General Use of Each Floor (e.g., familyroom, bedroom, laundry, workshop, storage)**
Basement	_____
1st Floor	_____
2nd Floor	_____
3rd Floor	_____
4th Floor	_____

8. FACTORS THAT MAY INFLUENCE INDOOR AIR QUALITY

a. Is there an attached garage? Y / N

b. Does the garage have a separate heating unit? Y / N / NA

c. Are petroleum-powered machines or vehicles stored in the garage (e.g., lawnmower, atv, car) Y / N / NA Please specify_____

d. Has the building ever had a fire? Y / N When?_____

e. Is a kerosene or unvented gas space heater present? Y / N Where?_____

f. Is there a workshop or hobby/craft area? Y / N Where & Type? _____

g. Is there smoking in the building? Y / N How frequently? _____

h. Have cleaning products been used recently? Y / N When & Type? _____

i. Have cosmetic products been used recently? Y / N When & Type? _____

j. Has painting/staining been done in the last 6 months? Y / N Where & When? _____

k. Is there new carpet, drapes or other textiles? Y / N Where & When? _____

l. Have air fresheners been used recently? Y / N When & Type? _____

m. Is there a kitchen exhaust fan? Y / N If yes, where vented? _____

n. Is there a bathroom exhaust fan? Y / N If yes, where vented? _____

o. Is there a clothes dryer? Y / N If yes, is it vented outside? Y / N

p. Has there been a pesticide application? Y / N When & Type? _____

Are there odors in the building? Y / N
If yes, please describe: _____

Do any of the building occupants use solvents at work? Y / N
(e.g., chemical manufacturing or laboratory, auto mechanic or auto body shop, painting, fuel oil delivery, boiler mechanic, pesticide application, cosmetologist

If yes, what types of solvents are used? _____

If yes, are their clothes washed at work? Y / N

Do any of the building occupants regularly use or work at a dry-cleaning service? (Circle appropriate response)

Yes, use dry-cleaning regularly (weekly) No
Yes, use dry-cleaning infrequently (monthly or less) Unknown
Yes, work at a dry-cleaning service

Is there a radon mitigation system for the building/structure? Y / N Date of Installation: _____
Is the system active or passive? Active/Passive

9. WATER AND SEWAGE

Water Supply:	Public Water	Drilled Well	Driven Well	Dug Well	Other: _____
Sewage Disposal:	Public Sewer	Septic Tank	Leach Field	Dry Well	Other: _____

10. RELOCATION INFORMATION (for oil spill residential emergency)

a. Provide reasons why relocation is recommended: _____

b. Residents choose to: remain in home relocate to friends/family relocate to hotel/motel

c. Responsibility for costs associated with reimbursement explained? Y / N

d. Relocation package provided and explained to residents? Y / N

11. FLOOR PLANS

Draw a plan view sketch of the basement and first floor of the building. Indicate air sampling locations, possible indoor air pollution sources and PID meter readings. If the building does not have a basement, please note.

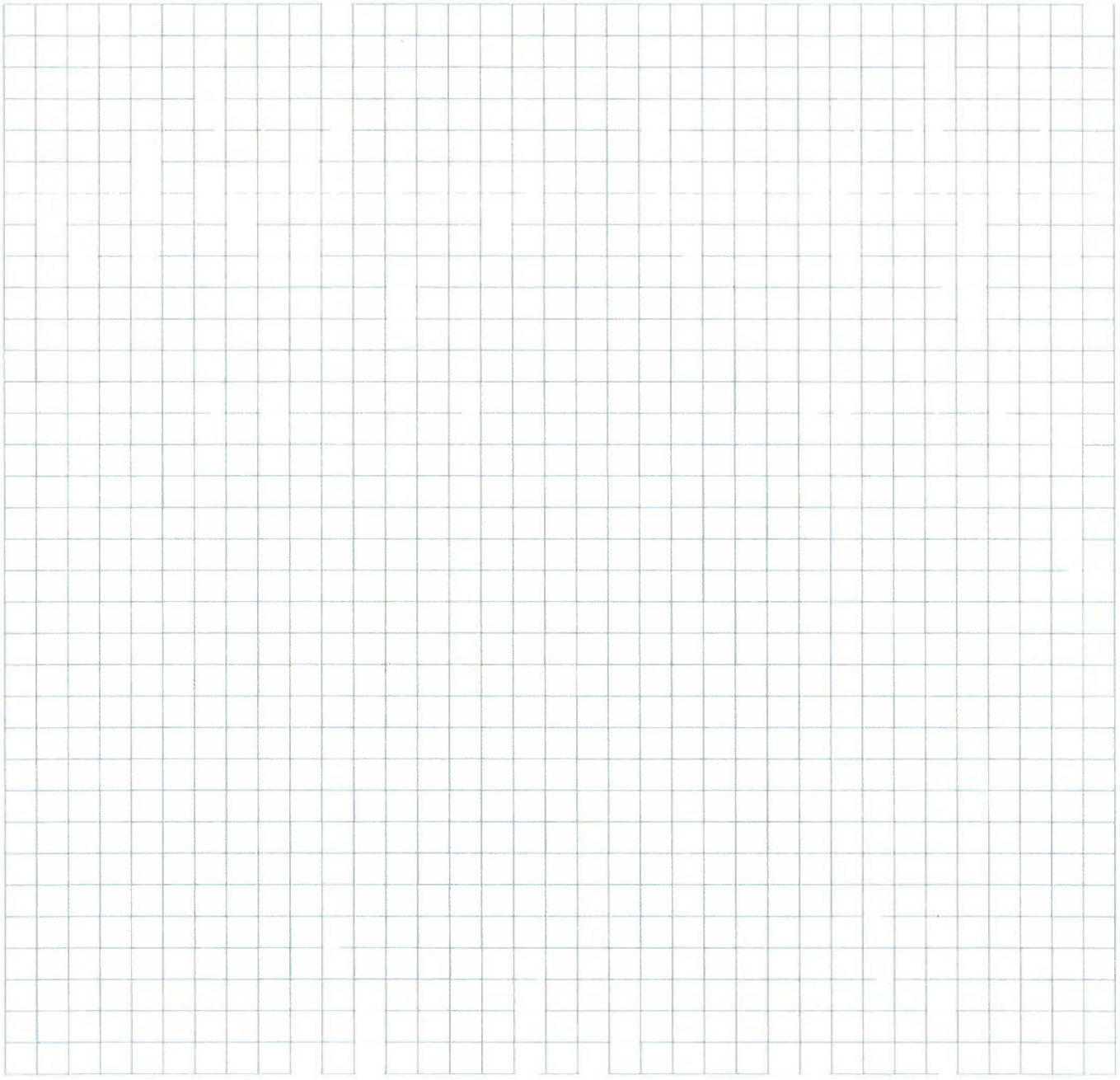
Basement:

First Floor:

12. OUTDOOR PLOT

Draw a sketch of the area surrounding the building being sampled. If applicable, provide information on spill locations, potential air contamination sources (industries, gas stations, repair shops, landfills, etc.), outdoor air sampling location(s) and PID meter readings.

Also indicate compass direction, wind direction and speed during sampling, the locations of the well and septic system, if applicable, and a qualifying statement to help locate the site on a topographic map.



13. PRODUCT INVENTORY FORM

Make & Model of field instrument used: _____

List specific products found in the residence that have the potential to affect indoor air quality.

Location	Product Description	Size (units)	Condition*	Chemical Ingredients	Field Instrument Reading (units)	Photo ** Y / N

* Describe the condition of the product containers as **Unopened (UO), Used (U),** or **Deteriorated (D)**
** Photographs of the **front and back** of product containers can replace the handwritten list of chemical ingredients. However, the photographs must be of good quality and ingredient labels must be legible.

ATTACHMENT C

SUB-SLAB VAPOR AND INDOOR AIR SAMPLING RECORD

AIR SAMPLING RECORD

Project Name:_____ Client:_____ Location ID:_____

Project Number:_____ Collector:_____ Date:_____

SUMMA Canister Record Information:

SUBSLAB SOIL VAPOR SAMPLE		INDOOR AIR - BASEMENT		ASSOCIATED AMBIENT	
Flow Regulator No:		Flow Regulator No:		Flow Regulator No:	
Flow Rate (mL/min):		Flow Rate (mL/min):		Flow Rate (mL/min):	
Canister Serial No:		Canister Serial No:		Canister Serial No:	
Start Date/Time:		Start Date/Time:		Start Date/Time:	
Start Pressure ("Hg):		Start Pressure ("Hg):		Start Pressure ("Hg):	
Stop Date/Time:		Stop Date/Time:		Stop Date/Time:	
Stop Pressure ("Hg):		Stop Pressure ("Hg):		Stop Pressure ("Hg):	
Sample ID:		Sample ID:		Sample ID:	

Other Sampling Information:

Finished Basement, Crawl Space, Unfinished Basement		Story/Level:		Direction from Building:	
Floor Slab Thickness:		Room:		Distance from Building:	
Potential Vapor Entry Points:		Potential Vapor Entry Points:		Distance from Roadway:	
Floor Surface:		Floor Surface:		Ground Surface:	
Noticable Odor:		Noticable Odor:		Noticable Odor:	
PID Reading (ppb):		PID Reading (ppb):		PID Reading (ppb):	
Intake Depth/Height:		Intake Height:		Intake Hieght Above Ground Surface:	
Helium Test Conducted? Breakthrough %:		Indoor Air Temp:		Intake Tubing Used?	

Comments/Location Sketch:

amec

9725 Cogdill Road, Knoxville, TN 37932