

**QUALITY ASSURANCE PROJECT PLAN ADDENDUM FOR
ST. JOHNSBURY ARMORY
TARGETED BROWNFIELDS ASSESSMENT
ST. JOHNSBURY, VERMONT
RFA - 22163 AddStJohnsburyArmoryHBM**

Prepared For:
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EPA CONTRACT NO. 68HE0122R0005
SITE No. 68HE0122F0044-13

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Submittal Date: July 10, 2023

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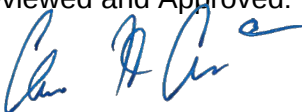
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1.0 INTRODUCTION

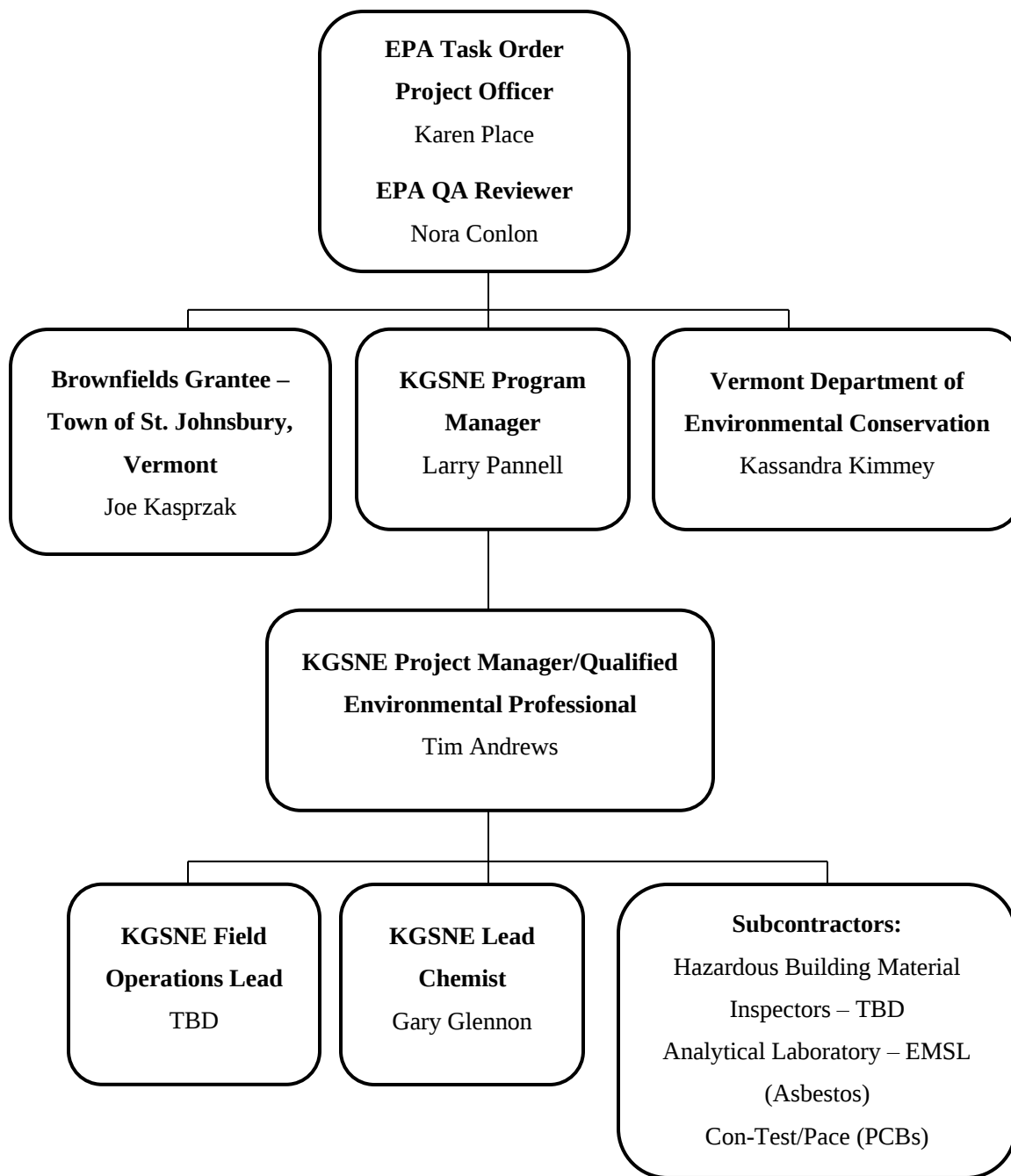
This Quality Assurance Project Plan Addendum (QAPPA) was prepared by KGSNE JV II, LLC (KGSNE) for the United States Environmental Protection Agency (EPA) under Contract No. 68HE0122D0001 Task Order No. 68HE0122F0044, Site No. 68HE0122F0044-13. This QAPPA addresses the quality procedures for the Targeted Brownfields Assessment (TBA) data collection activities for the St. Johnsbury Armory project located at 1249 Main Street, St. Johnsbury, Vermont (the Site). A Site Locus Map is included as Figure 1. A Site Plan is included as Figure 2.

This QAPPA documents details pertaining to the performance of TBA activities. This QAPPA is intended to append to and incorporate by reference the procedures and quality control measures included in the Program Quality Assurance Project Plan (Program QAPP) prepared by KGSNE and approved by EPA on October 27, 2022 (RFA# 22163).

The work described herein has been developed in general accordance with *EPA – New England, Region I Planning and Documenting Brownfields Projects Generic Quality Assurance Project Plans and Site Specific QAPP Addenda*, dated March 2009. This QAPPA document was developed using available guidance documents from the EPA and information provided by the selected laboratories and subcontractors.

2.0 PROJECT ORGANIZATION AND RESPONSIBILITY

Project organization and responsibility shall be as shown below.



This project team represents the individuals responsible for the stated tasks but is subject to change. Karen Place will be the EPA Contracting Officer's Representative (COR). Joe Kasprzak, Assistant Town Manager, will be the contact for the Town of St. Johnsbury (Town). Tim Andrews will manage

KGSNE and subcontractor tasks. Gary Glennon will monitor KGSNE project quality and will coordinate with the analytical laboratory and manage data review activities.

3.0 PROBLEM DEFINITION AND CONTAMINANTS OF CONCERN

The goal of this TBA is to perform a supplemental hazardous building material survey (HBMS) at the Site to address data gaps identified by Atlas Technical Consultants (ATC). The supplemental data will be used to further delineate the distribution of hazardous materials to support future building renovation and reuse or demolition and disposal. Additionally, evaluation of sub-slab soils for possible contamination by polychlorinated biphenyls (PCBs) is included in the assessment scope.

The objective will be accomplished by investigating the interior (basement, first floor, and second floor) and exterior of the armory building for the presence of asbestos containing materials (ACM), and PCBs, as identified in a workplan prepared by ATC (ATC, 2023) on behalf of the Town. Other common HBM were delineated in previous investigations.

3.1 Historical Site Investigations

There have been four previous Site investigations:

Limited Interior Asbestos Inspection – Crothers Environmental Group LLC, 11/1/2008

This assessment was an initial building materials survey for asbestos.

Environmental Survey – Cardno ATC, 3/28/2013

This assessment included inventory and sampling of asbestos, PCBs, lead-based paint, lead dust, mold testing, and a floor drain investigation.

PCB Building Material Survey – ATC Group Services LLC, 3/3/2017

This assessment included additional PCB sampling of building materials, indoor air, and the concrete floor slab.

Draft Targeted Brownfields Assessment Report – KGSNE, LLC, 3/9/2021

This assessment included additional PCB and asbestos sampling, lead paint testing, a regulated/universal waste survey, and mold survey and sampling.

3.2 Additional Hazardous Building Materials Sampling

Based on a review of the prior data, ATC determined that additional sampling of suspect building materials is required to fill data gaps relative to the presence of hazardous building materials in order to develop a hybrid “Risk/Performance-Based Clean-up and Disposal Plan” for the abatement of identified materials. ATC identified the additional sampling in a Workplan for Additional Building Materials Sampling (the Workplan; ATC, 2023) prepared to address the sampling necessary to complete the clean-up plan and prepare contractor bid documents. A copy of the workplan is included in Appendix A for reference.

Based on the need to iteratively evaluate HBM and likely waste streams to be generated from the abatement, the Workplan defined the additional sampling in two phases. Phase 1 outlines the known data gaps and materials requiring additional evaluation based on the prior data. Phase 2 would be determined based on the results of Phase 1 analyses and whether the results mandate the need for additional sampling. This QAPPA addresses only Phase 1 sampling.

4.0 PROJECT DESCRIPTION AND TIMELINE

KGSNE proposes to complete the following tasks:

- Project Planning – Develop a site-specific Health and Safety Plan (HASP) and this QAPPA.
- Hazardous Building Materials Survey – Locate, quantify, sample, and assess hazardous building materials as defined in Phase 1 of the Workplan.
- Report Preparation – Summarize and evaluate data; prepare the TBA report to present collected data.

The proposed timeline for aforementioned tasks is as follows:

		Project Timeline																			
		2023																			
Work Phase		June				July				Aug.				Sept.				Oct.			
Project Planning																					
HBMS																					
Data Evaluation and Reporting																					

5.0 SAMPLING DESIGN

KGSNE will procure a subcontractor to conduct a HBMS of the building. The survey will be performed in accordance with the statement of work (SOW), including the Workplan Phase 1 sampling scope.

Proposed assessment activities include ACM and PCB sampling of building materials, as well as PCB sampling of sub-slab soil. Sampling locations of building materials have been pre-determined based on previous investigations. Sub-slab locations have been predetermined but will be adjusted based on field observations. Proposed investigation activities are discussed in further detail in the sections that follow.

KGSNE will maintain proper documentation during sample collection. Documentation in the field logbook or sample logs will include the location of the sample collected, date and time, visual observations of the sample, type of media sampled, description of the sampling method, field observations and name of field personnel collecting the samples. Personal protective equipment (PPE) and decontamination procedures are discussed in the site-specific Health and Safety Plan.

In general, EPA does not establish SOPs for hazardous building materials inspections, or sample collection to support these surveys. Field analyses, inspection activities, and sample collection will be performed by qualified and certified environmental professionals in accordance with generally accepted professional standards. Field activities will be conducted in accordance with the KGSNE standard operating procedures (SOPs) identified on Table 1. The SOPs have been included in KGSNE's Program QAPP [KGSNE, 2022].

Investigation-derived wastes (IDW) will include solid wastes (gloves, paper wastes, packaging containers, etc.) which will be compiled and disposed of by KGSNE at its office. IDW generated during sub-slab coring will include water and slurry which will be containerized in a 55-gallon drum. KGSNE will arrange for off-site disposal of accumulated IDW during Phase 2 of the assessment, following state and federal regulations.

5.1 Asbestos Inspection and Sampling

KGSNE will subcontract and oversee a properly licensed and certified HBM inspector to collect samples from suspect ACM to identify and quantify ACM present in the building. Sample collection activities will be performed in accordance with National Emission Standards for Hazardous Air Pollutants (NESHAP) for demolition, EPA Asbestos Hazard Emergency Response Act (AHERA) 40 Code of Federal Regulations (CFR) Part 763, and Vermont Regulations for Asbestos Control (VRAC) VSA Title 18, Chapter 26. These regulations require inspectors to collect multiple samples from homogeneous areas identified throughout the buildings to identify asbestos content in suspect ACM. Homogeneous areas consist of areas that appear to be similar in material color, texture, and date of installation or application.

Samples of suspect ACM will be collected from the specific materials identified by ATC in the Workplan as summarized in Table 2a. A description of each material, approximate quantity, and location where each material is present in Table 2a. A photograph of each suspect material to be sampled is provided in the photograph log from the Workplan included in Appendix A. Figures 3a through 3c provide the layout of each floor of the building (basement, first floor, and second floor) as well as the room identifiers referenced in Table 2a.

Table 2a includes sampling of any suspect material that may be hidden behind the brick façade of the building. A sufficient number of exploratory removals of brick on interior and exterior will be conducted, on both the eastern and western portions of the building, to identify whether any hidden suspect materials exist. Locations for removal of brick for eastern portion of building will be coordinated with Town, since this portion of the building is being renovated. Vent covers in Rooms 7 and 15 will be opened to evaluate whether any suspect materials exist behind them. KGSNE shall perform exploratory work to inspect inside of chase to identify whether any suspect materials exist, and sample any that are identified. Repair of sample locations is not required, except for roof materials identified for sampling. For these roofing materials, a Vermont-licensed roofing contractor will be hired by the HBM inspector to repair any cuts and/or penetrations made.

During the course of Phase 1 sampling, if the HBM inspector identifies any other suspect ACM, KGSNE will contact ATC to describe the material and location, and receive feedback on whether this material should be included in the sampling effort. If ATC recommends that a specific material

be sampled, KGSNE will plan collection of an appropriate number of samples to characterize that material during Phase 2.

Asbestos-containing building materials are classified as surfacing material (SM), thermal systems insulation (TSI), or miscellaneous materials. SM is a material that is sprayed, troweled-on, or otherwise applied to surfaces. Examples include acoustical plaster on ceilings, fireproofing on structural members, or similar applications for acoustical, fireproofing, and other purposes. TSI is a material applied to pipes, fittings, boilers, breeching, tanks, ducts or other structural components to prevent heat loss or gain. Miscellaneous materials are all other ACMs including flooring, mastics, caulking, etc. The following describes the minimum number of samples to be collected per homogeneous area:

- Minimum of 3 samples SM in quantities of 1,000 square feet or less.
- Minimum of 5 samples of SM in quantities greater than 1,000 square feet but less than 5,000 square feet.
- Minimum of 7 samples of SM in quantities greater than 5,000 square feet.
- Minimum of 3 samples of TSI materials.
- Minimum of 2 samples of miscellaneous materials.

The HBM inspector will collect 90 bulk material samples from suspect building materials for asbestos analysis. Samples will be shipped or delivered to EMSL Analytical, Inc. (EMSL) by the HBM inspector using standard chain-of-custody protocols. Polarized light microscopy (PLM, EPA method 600/R-93/116) will be used to determine the presence or absence of ACM, with a standard turn-around time. Non-friable Organically Bound (NOB) materials shall be analyzed via PLM with gravimetric reduction. In an attempt to reduce the number of samples requiring analysis, the laboratory will be instructed to stop analysis of samples from a specific homogeneous material after an analysis indicates that the first sample of that material contains 1% or greater asbestos (Positive Stop). Any materials found to contain <2% asbestos by PLM analysis shall be analyzed via 400 point count. Any NOB material for which all samples are found to contain <1% asbestos via PLM analysis shall be re-analyzed using Transmission Electron Microscopy (TEM)-NOB. Up to 20 samples are included for analysis via TEM-NOB.

Due to the duplicative nature of the sampling procedure, including multiple samples collected from homogeneous areas, it is anticipated that the samples described herein will meet QA/QC

requirements and no further QA/QC samples will be required. Vermont regulates materials containing greater than 1% asbestos; therefore, the project action limit (PAL) for asbestos will be 1% asbestos.

5.2 Hazardous Building Materials - PCBs

With oversight by KGSNE, the HBM inspector will collect bulk building material samples for laboratory analysis to determine the presence or absence of PCBs in suspect building materials. Samples of suspect PCB sealant/caulking and other materials should be collected from the specific materials identified in Table 2b (bulk materials) and 2c (paints and coatings). Figures 3a through 3c provide the layout of each floor of the building (basement, first floor, and second floor) as well as the room identifiers referenced in Tables 2b and 2c. A photograph of some of the suspect materials to be sampled is provided in the photograph log from the Workplan included in Appendix A.

The HBM inspector will collect bulk samples by removing a minimum of 10 grams of representative material from suspected media. Care will be taken to ensure that no other materials are intermixed with the sample prior to submittal to the laboratory.

For paint samples, a sample representative of the full thickness of wall paint (all layers) will be collected; no effort to collect individual layers of paint shall be expended. Paint samples shall not be collected where paint is peeling or chipping; instead, a smooth and intact location shall be selected for each sample. Prior to sampling, a water-wetted paper towel will be used to hand wipe the sampling area prior to collecting the sample, with the objective of removing dust or surface grime.

Repair of sample locations is not required, except for exterior caulking materials on the front (eastern) portion of the building. At these locations, the HBM inspector shall use exterior-grade acrylic caulk, gray in color, to recaulk locations where caulk samples are collected.

Sampling tools shall be decontaminated between samples by first removing gross contamination, and then performing a final wipe using a clean hexane-wetted paper towel. Alternatively, a disposable tool/blade can be used for each sample.

A total of 308 PCB building material samples (bulk and paint/coatings) will be collected as identified in Tables 2b and 2c. Bulk samples will be collected in 4-ounce glass jars and sent to Con-Test (a Pace Analytical Laboratory) for PCB analysis. Quality control samples collected during PCB bulk sampling will include field duplicates and matrix spike/matrix spike duplicates collected at a frequency of 1 per 20 samples (total of 16 duplicate samples). Samples will be transported under chain-of-custody protocol for PCB analysis in accordance with the EPA 3540C Soxhlet extraction method and SW-846 8082 Aroclor analytical method.

The Toxic Substances Control Act (TSCA) identifies materials that contain greater than 50 parts per million (ppm) of total PCBs (as Aroclors) as a hazardous waste material. TSCA also established a PCB cleanup standard (for unconditional use) of 1 ppm; therefore, the PAL for PCBs will be 1 ppm. KGSNE will compare PCB analytical results to this PAL and the TSCA hazardous waste threshold for PCBs.

5.3 Sub-Slab PCB Sampling

KGSNE will collect five grab soil samples from below the concrete basement slab from Rooms 21, 23, 25A, 27, and 31, with the actual sample location in each room determined in the field. Table 2d summarizes the sub-slab samples proposed and Figures 3a through 3c provide the layout of each floor of the building (basement, first floor, and second floor) as well as the room identifiers referenced. Preference for sample location in each room shall be given to a location at or near any visible holes or cracks in the floor slab.

At each sample location, KGSNE will oversee a coring contractor core a 4-inch hole through the floor slab using a wet coring method. Prior to coring, KGSNE shall use hand tools to remove all surface coatings and paint from the concrete surface. Debris generated by the operation will be containerized in a 55-gallon drum for disposal. The final paint/coating removal method shall include wire brushing of the surface, followed by a wipe with a water-wetted rag. A shop vac will be utilized during coring to extract water/slurry from the edge of the core hole so that minimal water/slurry will be discharged into the underlying soil. All water and slurry generated shall be containerized in a 55-gallon drum.

KGSNE will collect a representative grab sample of soil from the center bottom of each cored hole using decontaminated hand tools, with soil collected up to 2 inches below the surface of the soil.

After sampling, the concrete core will be returned to the hole. Sampling tools, including coring equipment, shall be decontaminated by first removing gross contamination, and then performing a final wipe using a clean hexane-wetted paper towel.

A total of 5 PCB sub-slab soil samples will be collected as identified in Table 2d. Soil samples will be collected in 4-ounce glass jars and sent to Con-Test (a Pace Analytical Laboratory) for PCB analysis. Quality control samples collected during PCB soil sampling will include field duplicates and matrix spike/matrix spike duplicates collected at a frequency of 1 per 20 samples (1 duplicate sample). All samples will be transported under chain-of-custody protocol and submitted for laboratory analysis of PCBs in accordance with the EPA 3540C Soxhlet extraction method and SW-846 8082 Aroclor analytical method.

TSCA identifies materials that contain greater than 50 ppm of total PCBs (as Aroclors) as a hazardous waste material. TSCA also established a PCB cleanup standard (for high frequency occupancy) of 1 ppm; therefore, the PAL for PCBs will be 1 ppm. KGSNE will compare PCB analytical results to this PAL and the TSCA hazardous waste threshold for PCBs.

5.4 Sample Identification Procedures

Each asbestos and PCB sample will be assigned a unique sample tracking number that will consist of two alphanumeric code segments separated by hyphens. The sample tracking number will identify the sample medium and count. Other pertinent information regarding sample identification will be recorded in the field logbooks or on sample log sheets.

The sample tracking number format will be as follows:

Character Type:

- A - Alpha
- N - Numeric

AAA(Varies) - NNNA(Varies)
Medium Count

Medium:

- AS - Building Material Sample for Asbestos
- PCB - Building Material Sample for PCBs
- SO - Soil Sample for PCBs

Count:

The count represents the chronology of the samples collected. The first two numbers indicate the sample count. They will start at 001 and increase to 999. The letter at the end of the two numbers will be either a, b, or c which will be used to identify multiple samples of the same homogeneous group. Homogenous group identification letters will only be used for asbestos samples.

For example, the first asbestos sample collected will be identified as AS-001a. The second asbestos sample collected from that same homogenous group will be AS-001b. The first PCB building material sample collected will be identified as PCB-001, while the first PCB soil sample will be SO-001.

Blind field duplicates will be submitted to the laboratory for PCB analysis only. For PCB QA/QC samples, the following codes will be applied in place of the numeric count.

- FD = Field Duplicate

KGSNE will apply a sequential number for each QA/QC sample such that similar samples collected on the same day are uniquely identified. For example, the first duplicate PCB building material sample collected will be identified as “PCB-FD01” on laboratory documentation (i.e., sample bottle label and COC form) with a time of collection that differs from the duplicate source. The duplicate source will be recorded in field documentation (sample log sheet and/or the logbook) not shared with the analyzing laboratory.

6.0 SAMPLING AND ANALYTICAL METHODS REQUIREMENTS

Table 1 summarizes the sampling and analytical method requirements for the investigation at the Site. Table 3 summarizes the sampling requirements including containers, preservation, and maximum holding times. The SOPs for proposed analytical methodologies have been previously included and approved in KGSNE’s Program QAPP [KGSNE, 2022].

QA/QC samples will not be collected for asbestos due to the duplicative nature of the sampling procedure. KGSNE will collect QA/QC samples during PCB bulk sampling and soil sampling and will include the collection of field duplicates and MS/MSDs.

6.1 Reference Limits

The subcontracted laboratory will perform the asbestos and PCB analysis. Table 4 provides project-specific action limits and laboratory reporting limits for applicable analytes in building materials.

6.2 Data Usability and Validation

KGSNE's analytical subcontractor will perform the analyses for the samples collected. The *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, Third Edition and its updates (EPA, 2014) and procedures will be used to conduct the analyses. Final laboratory reports will include appropriate references to the procedures followed.

Calibration procedures, field documentation, QA/QC samples, data management, assessments, project reports, and data usability issues are summarized in the Program QAPP text, tables, and SOPs.

The analytical data will be reviewed to a modified Tier 1 level in accordance with the *EPA-New England Environmental Data Review Supplement for Regional Data Review Elements and Superfund Specific Guidance/Procedures*, (EPA-NE, 2020). This review includes a completeness check plus a review of laboratory and field QC sample compliance (laboratory control samples, field duplicates, and surrogates). Asbestos will only be evaluated for completeness. The laboratory data packages, and data review comments will be included in the final project data deliverable.

7.0 TARGETED BROWNFIELDS ASSESSMENT REPORT

KGSNE will prepare a Targeted Brownfields Assessment Report that will include a cover page, a table of contents, an executive summary highlighting the work completed and any deviations/problems encountered and a summary of results of interests; data summary tables;

relevant site figures; field notes and photographs; the data validation memorandum; and laboratory data reports. Pursuant to contract requirements, this deliverable will be issued to EPA only; however, EPA may request the document transfer to other project stakeholders. KGSNE will issue the document to only EPA and EPA-authorized stakeholders.

REFERENCES

Atlas Technical Consultants. 2023. Workplan for Additional Building Materials Sampling, Former St. Johnsbury Armory. March.

EPA Region I. 2009. Planning and Documenting Brownfields Projects Generic Quality Assurance Project Plans and Site Specific QAPP Addenda. March.

EPA Region I. 2020. Environmental Data Review Supplement for Region I Data Review Elements and Superfund Specific Guidance/Procedures. September.

KGSNE JV II, LLC. 2022. Program Quality Assurance Project Plan; RFA# 22163. October 25.

T A B L E S

Table 1
Field Sampling and Fixed Laboratory Analytical Method/SOP References
St. Johnsbury Armory
St. Johnsbury, Vermont

Title/Method Name	Originating Organization	Modified for Project Work Y or N	Analytical Parameter	SOP Number	Program QAPP SOP Reference No.
Site Access and Utility Clearance	KGSNE	N	--	ENV-009	F-24
Field Sampling Equipment Decontamination	KGSNE	N	--	FS-004-rev02	F-3
Environmental Samples: Packing and Shipping	KGSNE	N	--	SH-001-rev02	F-18
Field Logbook Recording	KGSNE	N	--	DOC-007	F-35
Surficial Soil, Sediment, and Sludge Sampling	KGSNE	N	--	SA-007	F-22
PLM SOP EPA 600/R-93/116, EPA 600/M4/82/020, EPA 400 Point Count, EPA 1000 Point Count, EPA PLM NOB, NYSDOH ELAP 198.1 & 198.6, NIOSH 9002, IRSST 244	EMSL	N	Asbestos PLM	ASB-SOP-200 PLM	EMSL-4
TEM CARB Asbestos Analysis of Bulk Material by TEM Via Modified EPA 600/R-93/116 – section 2.5.5.2 and CARB 435 (milling) Prep	EMSL	N	Asbestos TEM	ASB-SOP-410 TEM CARB	EMSL-1
Method 3540c Soxhlet Extraction Procedure for Polychlorinated Biphenyls	Con-Test	N	PCBs	SOP_3540c, Doc. No. 127	CT-5a
Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Method SW846 8082A)	Con-Test	N	PCBs	SOP_8082 Doc. No. 51	CT-5b

Notes The most current version of the organizations' SOPs will be used whenever required for any Brownfields investigation.

Laboratories:

Con-Test, a Pace Analytical Laboratory (Con-Test) of East Longmeadow, MA

EMSL Analytical, Inc (EMSL) of Woburn, MA

PCBs=polychlorinated biphenyls

PLM=polarized light microscopy

TEM=transmission electron microscopy

SOP=standard operating procedure

Table 2a
Building Materials Asbestos Samples
St. Johnsbury Armory
St. Johnsbury Vermont
Page 1 of 3

Material & Description (Material ID)	Appendix Photograph Reference No.	Material Location(s)	Quantity	No. of Recommended Samples	Recommended Sample Locations
Caulking Materials					
Black caulk (#1)	1	Exterior; Between back edge of soffit and brick wall below; north and south sides of building	175 LF	2	Roofline - north side
White caulk (#2)	2	Exterior; Roofline intersection (sloping portion) between east and west portions of building, at top of metal flashing and in joint between roof and wall	20 LF	2	Roofline - north side
Flashing caulk (#3)	3	Exterior; Small roof over southwest loading ramp roofline intersection with brick wall, at top of metal flashing	20 LF	2	SW Corner Ramp Roof
Caulk (if present) (#4)	4	Over central stair to basement; roofline intersection with brick wall	20 LF	2	Small roof over north central stair to basement
Light gray horizontal caulk (#5)	5	Roof - chimney	10 LF	2	Roof - chimney
Yellow caulking around interior door trim (no photo) (#6)	NA	Room 17 (gym) between exit door frame and interior brick, north side of gym	20 LF	2	Room 17 (gym)
Roofing Materials					
Asphalt shingle (#7)	6	Eastern end of western portion of building - upper wall on roof level adjacent to flat roof - under slate wall shingles	200 SF	2	At material location
Roof paper (brown & black [tar]) (#8 and #9)	6	Eastern end of western portion of building - upper wall on roof level adjacent to flat roof - under slate wall shingles	200 SF	2	At material location
Material(s) (including tar paper) that may be present under gambrel slate (#10)	7	Gambrel roof - under slate	~6,000 SF	2	Gambrel roof - top. Conduct exploratory work under slate.
Rubber roofing adhesive (#11)	8	Throughout flat roof, eastern portion of building, seams, corners, various locations	100 SF	3	Flat roof, eastern portion of building
Rubber roofing patch adhesive - if present (no photo) (#12)	NA	Flat roof, eastern portion of building, patches (if present)	20 SF	3	Flat roof, eastern portion of building
Asphalt roof repair sheeting (#13)	24	North side of gambrel roof	~2,000 SF	2	Gambrel roof - north side
Interior Wall/Ceiling Materials					
Celotex board (#14)	9	Rooms 6 (loose panels), 10 (walls of closet)	100 SF	2	Room 6, 10
Thin wall panels (#15)	10	Room 10, 16	~700 SF	2	Room 10, 16
Ceiling panels, if not wood/plywood (no photo) (#16)	NA	Room 17 (gym)	~6,000 SF	2	Room 17
Insulation, if any, behind ceiling panels (no photo) (#17)	NA	Room 17 (gym)	~6,000 SF	2	Room 17
Wood paneling - backing paper (#18)	11	Room 5	480 SF	2	Room 5
Black paper (L side of middle window below sill) (#19)	12	Room 5, behind wood paneling? (observed in gap between window trim and paneling)	Up to 480 SF	2	Room 5
Drywall (#20)	13, 14	Walls, ceilings, in-fill panels, around ductwork. Throughout building. Sometimes multiple layers. Includes rooms: 3, 6, 7, 12, 13, 14, 17, 18, 20, 21, 25, 26, 23/24 hallway, 27/bathroom hallway, 28, 30-37 hallway; 30, 31, 32, 33, 34, 35, 36, 37, basement stairs	~6,400 SF	7 rooms x 2 samples each = 14 samples	Rooms 3, 7, 12, 14, 18, 21, 34 (2 samples in each room)
Joint compound (#21)	13, 14	Rooms 6, 7, 12, 13, 14, 26, basement stair landing (where drywall is painted)	~900 SF	3	Room 6, 7, 14

Table 2a
Building Materials Asbestos Samples
St. Johnsbury Armory
St. Johnsbury Vermont
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Material & Description (Material ID)	Appendix Photograph Reference No.	Material Location(s)	Quantity	No. of Recommended Samples	Recommended Sample Locations
Joint compound (#22)	15	Room 3 (patch)	5 SF	3	Room 3 (all samples)

Table 2a
Building Materials Asbestos Samples
St. Johnsbury Armory
St. Johnsbury Vermont
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Material & Description (Material ID)	Appendix Photograph Reference No.	Material Location(s)	Quantity	No. of Recommended Samples	Recommended Sample Locations
Interior Miscellaneous Materials					
Sprinkler fitting thread sealant (#23)	19	Room 20, 21, 26 (closet)	<1 SF, several heads	2	Room 20, 21
Interior Flooring Materials					
Beige mastic (#24)	16	Room 13, 14, on wood floor	284 SF	2	Room 13, 14
White sub-floor plaster-like filler (#25)	16	Room 14, under wood floor	Max 230 SF	3	Room 14
Carpet mastic (#26)	17	Room 12, remnant fibers on wood floor	Max 360 SF	2	Room 12
Yellow mastic (#27)	18	Room 22, 27, 30-37, on concrete	~3,900 SF	2	Room 22, 27
Black mastic (#28)	20	Room 18, on underside of VFT	340 SF	2	Room 18
Leveling compound (#29)	21	Room 27, 34	80 SF	3	Room 27, 34
Ceramic Tile thinset (#30)	22	Room 23, floor	100 SF	2	Room 23
Ceramic Tile grout (#31)	22	Room 23, floor	100 SF	2	Room 23
Ceramic Tile (#32)	22	Room 23, floor	100 SF	2	Room 23
Materials, if any, beneath Ceramic Tile (no photo) (# TBD)	22	Room 23, floor	100 SF	2	Room 23
Mastic assoc. with old "Battleship" linoleum, if any (Material #33)	23	Room 15	75 SF	2	Room 15
Exterior Miscellaneous Materials					
Foundation Waterproofing (no photo) (# TBD)	NA	Exterior of foundation	Unknown	3	Exterior of foundation
Materials behind brick façade, if any (paper, mastic, insulation) (no photo) (# TBD)	NA	Behind brick façade	Unknown	3	3 samples of each identified material; perform exploratory removal of brick (*see text for more detail on sampling*)
				Total Bulk Samples	90
				Duplicate Samples	N/A
				Grand Total Bulk Samples	90

TBD = To be determined by contractor
Sample list from *Workplan for Additional Hazardous Building Materials Sampling* , Atlas Technical Consultants, 2023

Table 2b
PCB Bulk Material Samples
St. Johnsbury Armory
St. Johnsbury Vermont
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Material Type / Material ID	Material Description	Material Location	Quantity of Material	Number of Samples	Location(s) of Samples	Appendix C Photograph Reference No.
Caulk / #1	Caulk bead – characteristics unknown	Exterior - Between back edge of soffit and brick wall; north and south sides of building; a portion is hanging down on north side	70 LF	3	North side of building	1
			70 LF	3	South side of building	1
Caulk / #2	White	Exterior – Roofline intersection (sloping portion) between east and west portions of building, at top of metal flashing and in joint between roof and wall.	30 LF	3	North side of building	2
Caulk / #3	White	Exterior – Small roof over southwest loading ramp roofline intersection with brick wall, at top of metal flashing.	10 LF	3	Southwest side of building over loading ramp	3
Caulk (if present) / #4	Characteristics Unknown	Exterior – Small roof over central steps to basement; at roofline intersection with brick wall.	15 LF	3	Small roof over north central stair to basement	4
Caulk / #5	White	Chimney – Copper Flashing – along top edge	1 LF	1	Chimney	5
Celotex board / #14	Brown fibrous board	Room 6 (loose panels), Room 10 (walls of closet). Collect samples of unpainted material.	100 SF	3	Room 6 (loose panels), Room 10 (walls of closet)	9
Black Paper / #19	Black	Room 5, behind wood paneling? (observed in gap between window trim and paneling)	Up to 480 SF	3	Room 5	12
Beige Mastic / #24	Beige	Room 13, 14, on wood floor	284 SF	3	Room 13, 14	16
Carpet Mastic / #26	Remnant carpet mastic	Room 12, remnant carpet fibers on wood floor	Up to 360 SF	3	Room 12	17
Black Mastic / #28	Black, VCT mastic	Room 18, on underside of VFT	340 SF	3	Room 18	20
Old Linoleum Mastic / #33	Unknown	Room 15, may be present beneath old “Battleship” linoleum	75 SF	3	Room 15	23
Total Bulk Samples				34		
				2		
				36		

Notes:
 LF = Linear feet
 SF = Square feet
 Sample list from *Workplan for Additional Hazardous Building Materials Sampling*, Atlas Technical Consultants, 2023

Table 2c
PCB Paint and Coating Samples
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Floor	Room	Surface¹	Approx. SF of Surface	Substrate	No. Samples	Ancillary Surfaces (if any)	Approx. SF of Surface	No. Samples	Notes / Comments:
Interior									
2nd	3	East	270	Plaster/Lath	1	Wood Trim	15	1	
		South	270	Plaster/Lath	1	Wood Trim	15		
		West	270	Plaster/Lath	1	Wood Trim	15		
		North	270	Plaster/Lath		Wood Trim	15		
		Ceiling	900	Plaster/Lath	1	(Door)	20	1	
		Floor	900	Underlayment	--	NA		--	Unpainted/coated
	4	East	270	Plaster/Lath	1	Wood Trim	15	1	
		South	180	Plaster/Lath	1	Wood Trim	10		
		West	270	Plaster/Lath	1	Wood Trim	15		
		North	180	Plaster/Lath		Wood Trim	10		
		Ceiling	600	Bare Lath	--	(Door)	20	1	Unpainted/coated
		Floor	600	Underlayment	--	NA		--	Unpainted/coated
	5	East	180	Plaster/Lath	1	Wood Trim	10	1	
		South	90	Plaster/Lath	1	Wood Trim	5		
		West	180	Plaster/Lath	1	Wood Trim	10		
		North	90	Plaster/Lath		Wood Trim	5		
		Ceiling	200	Drop Tiles	1	(Door)	20	1	
		Floor	200	Hardwood	1	NA		--	
	6	East	72	Plaster/Lath	1	Wood Trim	4	1	Small room
		South	72	Plaster/Lath	1	Wood Trim	4		
		West	72	Plaster/Lath		Wood Trim	4		
		North	72	Plaster/Lath		Wood Trim	4		
		Ceiling	64	Drywall	1	(Door)	20	1	
		Floor	64	Hardwood	1	NA		--	
	7	East	54	Plaster/Lath	1	Wood Trim	3	1	Small room
		South	54	Plaster/Lath	1	Wood Trim	3		
		West	54	Plaster/Lath		Wood Trim	3		
		North	54	Plaster/Lath		Wood Trim	3		
		Ceiling	36	Drywall	1	(Door)	20	1	
		Floor	36	Hardwood	1	NA		--	
	8	East	180	Plaster/Lath	1	Wood Trim	10	1	
		South	108	Plaster/Lath	1	Wood Trim	6		
		West	180	Plaster/Lath	1	Wood Trim	10		
		North	108	Plaster/Lath		Wood Trim	6		
		Ceiling	240	Plaster/Lath	1	(Door)	20	1	
		Floor	240	Hardwood	1	NA		--	

Table 2c
PCB Paint and Coating Samples
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Floor	Room	Surface¹	Approx. SF of Surface	Substrate	No. Samples	Ancillary Surfaces (if any)	Approx. SF of Surface	No. Samples	Notes / Comments:
2nd	9	East	180	Plaster/Lath	1	Wood Trim	10	1	
		South	90	Plaster/Lath	1	Wood Trim	5		
		West	180	Plaster/Lath	1	Wood Trim	10		
		North	90	Plaster/Lath		Wood Trim	5		
		Ceiling	200	Plaster/Lath	1	(Door)	20	1	
		Floor	200	Hardwood	1	NA		--	
	10	East	180	Plaster/Lath	1	Wood Trim	10	1	
		South	90	Plaster/Lath	1	Wood Trim	5		
		West	180	Plaster/Lath	1	Wood Trim	10		
		North	90	Plaster/Lath		Wood Trim	5		
		Ceiling	200	Bare Lath	--	(Door)	20	1	Unpainted/coated
		Floor	200	Underlayment	--	NA		--	Unpainted/coated
Total Wall					22			--	
Total Floor Coating					5			--	
Total Ceiling					6			--	
Total Wall Trim					--			8	
Total Doors					--			8	
Total 2nd Floor					33			16	
1st	Stairwell 1-2	East	NA	NA	--	NA		--	
		South	225	Plaster/Lath	1	Wood rails	20 LF	1	
		West	54	Plaster/Lath		NA		--	
		North	225	Plaster/Lath	1	Wood rails	20 LF		
		Ceiling	150	Plaster/Lath	1	NA		--	
		Floor	150	Wood Steps	1	NA		--	
	11	East	135	Drywall over Plaster/Lath	1	Wood Trim	7.5	1	
		East	135	Plaster/Lath	1	NA		--	
		South	270	Drywall over Plaster/Lath	1	Wood Trim	15	--	
		South	270	Plaster/Lath	1	NA		--	
		West	135	Drywall over Plaster/Lath	1	Wood Trim	7.5	--	
		West	135	Plaster/Lath	1	NA			
		North	270	Drywall over Plaster/Lath		Wood Trim	15	--	
		North	270	Plaster/Lath		NA			
		Ceiling	450	Drywall over Plaster/Lath	1	(Door)	20	1	
		Ceiling	450	Plaster/Lath	1	NA		--	
		Floor	450	Hardwood	1	NA		--	
	12	East	270	Drywall over Plaster/Lath	1	Wood Trim	15	1	
		East	270	Plaster/Lath	1	NA		--	
		South	180	Drywall over Plaster/Lath	1	Wood Trim/NA	10	--	
South		180	Plaster/Lath	1	NA				
West		270	Drywall over Plywood (unpainted)	--	Wood Trim	15	--	Unpainted/coated	

Table 2c
PCB Paint and Coating Samples
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Floor	Room	Surface¹	Approx. SF of Surface	Substrate	No. Samples	Ancillary Surfaces (if any)	Approx. SF of Surface	No. Samples	Notes / Comments:
1st	12	West	270	Plywood		NA			
		North	180	Drywall over Plaster/Lath	1	Wood Trim	10	--	
		North	180	Plaster/Lath	1	NA			
		Ceiling	600	Drywall over Particle Board over Plaster/Lath	1	NA		--	
		Ceiling	600	Particle board over Plaster/Lath	1	NA		--	
		Ceiling	600	Plaster/Lath	1	NA		--	
		Floor	600	Hardwood	1	NA		--	
	13	East	54	Plaster/Lath	1	Wood Trim	3	1	Small room
		South	90	Plaster/Lath	1	Wood Trim	5		
		West	54	Plaster/Lath		Wood Trim	3		
		North	90	Plaster/Lath		Wood Trim	5		
		Ceiling	60	Wood Panel over Plaster/Lath	1	Door	20	1	
		Ceiling	60	Plaster/Lath	1	NA		--	
		Floor	60	Hardwood	1	NA		--	
	14	East	216	Drywall over Plaster/Lath	1	Wood Trim	12	1	
		East	216	Plaster/Lath	1	NA		--	
		South	108	Drywall over Plaster/Lath	1	Wood Trim	6	--	
		South	108	Plaster/Lath	1	NA			
		West	216	Drywall over Plaster/Lath	1	Wood Trim	12	--	
		West	216	Plaster/Lath	1	NA			
		North	108	Drywall over Plaster/Lath		Wood Trim	6	--	
		North	108	Plaster/Lath		NA			
		Ceiling	288	Drywall drop ceiling Wood Panel over Plaster/Lath	1	Door	20	1	
		Ceiling	288	Wood Panel over Plaster/Lath	1	NA		--	
		Ceiling	288	Plaster/Lath	1	NA		--	
		Floor	288	Hardwood	1	NA		--	
	15	East	54	Plaster/Lath	1	Wood Trim	3	1	Small room
		South	54	Plaster/Lath	1	Wood Trim	3		
		West	54	Plaster/Lath		Wood Trim	3		
		North	54	Plaster/Lath		Wood Trim	3		
		Ceiling	36	Plywood panel over Plaster/Lath	1	Door	20	1	
		Ceiling	36	Plaster/Lath	1	NA		--	
		Floor	36	Vinyl/Lin over Hardwood		NA		--	
	16	East	225	Wood panel over Plaster/Lath	1	Wood Trim	12.5	1	
		East	225	Plaster/Lath	1	NA		--	
		South	270	Wood panel over Plaster/Lath	1	Wood Trim	15	--	
		South	270	Plaster/Lath	1	NA			
		West	225	None	--	None			
		North	270	Wood panel over Plaster/Lath	1	Wood Trim	15		
		North	270	Plaster/Lath	1	NA			
		Ceiling	750	Plaster/Lath	1	(Door)	20	1	
		Floor	750	Underlayment	--	NA		--	Unpainted/coated

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PCB Paint and Coating Samples
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Floor	Room	Surface¹	Approx. SF of Surface	Substrate	No. Samples	Ancillary Surfaces (if any)	Approx. SF of Surface	No. Samples	Notes / Comments:
1st	Gym	East	1,386	Wood panelling over Particle board over Plaster/Lath	3	None		--	
		East	1,386	Particle board over Plaster/Lath	3	NA		--	
		East	1,386	Plaster/Lath	3	NA		--	
		South	957	Brick	1	None		--	Already have 2 samples
		West	1,386	Brick	3	None		--	Take high & low samples on this wall (1 high, 2 low)
		North	957	Brick	3	(Door)	20	1	
		Ceiling	5,481	Particle board/plywood	6	Metal Girders	1,500 LF	4	
		Floor	4,933	Hardwood/polyurethane Hardwood/Dk green Hardwood/Lt green Hardwood/White	5	NA		--	Area with coating but not painted Dark green paint area Light green paint area White paint area
		Floor	164	Hardwood/Dk green Hardwood/Lt green Hardwood/White	1	NA		--	
		Floor	164	Hardwood/Lt green Hardwood/White	1	NA		--	
		Floor	164	Hardwood/White	1	NA		--	
	Total Wall				46			--	
	Total Floor Coating				12			--	
	Total Ceiling				20			--	
	Total Steps/Rails				1			1	
	Total Wall Trim				--			6	
	Total Doors				--			6	
	Total Girders				--			4	
	Total 1st Floor				79			17	
Basement	Stairwell 0-1	East		NA	--	NA		--	
		South	225	Plaster/Lath	1	Wood rails	20 LF	1	
		West	54	Plaster/Lath	1	None		--	
		North	225	Plaster/Lath	1	Wood rails	20 LF		
		Ceiling	150	Drywall	1	(Door)	20	1	White painted
		Floor	150	Wood Steps	1	NA		--	
	18	East	180	Brick	1	None		--	
		South	135	Brick	1	None		--	
		West	180	Brick		None		--	
		North	135	Concrete/Brick	2	None		--	One sample on each substrate
		Ceiling	300	Drywall over Pressed tin over Lath	--	NA		--	Unpainted
		Ceiling	300	Pressed tin over Lath	1	NA		--	Painted?
		Ceiling	300	Lath	--	NA		--	Unpainted
		Floor	300	Gray Painted Concrete		NA		--	Under 12x12 VFT; previously sampled

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PCB Paint and Coating Samples
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Floor	Room	Surface¹	Approx. SF of Surface	Substrate	No. Samples	Ancillary Surfaces (if any)	Approx. SF of Surface	No. Samples	Notes / Comments:
Basement	20	East	270	Brick	1	None		--	
		South	180	Brick		None		--	
		West	270	Brick	1	None		--	
		North	180	Concrete/Brick	2	None		--	One sample on each substrate
		Ceiling	600	None	--	NA		--	
		Floor	600	Unpainted Concrete	--	NA		--	Unpainted/coated
	21	East	270	Concrete/Brick	2	None		--	One sample on each substrate
		South	180	Brick	1	None		--	
		West	270	Brick	1	None		--	
		North	180	Concrete/Brick		None		--	
		Ceiling	600	Drywall over ??	1	(Door)	20	1	White painted
		Floor	600	Beige Painted Concrete	2	NA		--	
	22	East	108	Painted Drywall (5 SF) Concrete Foundation	1	None		--	
		East	108	Concrete Foundation	1	NA		--	
		South	225	Painted plywood over Brick	1	None		--	
		South	225	Brick	1	NA		--	
		West	108	Painted plywood over Brick	1	None		--	
		West	108	Brick	1	NA		--	
		North	225	Painted plywood over Brick		None		--	
		Borth	225	Brick		NA		--	
		Ceiling	300	2x4 wood	1	(Door)	20	1	White painted
		Floor	300	Gray Painted Concrete		NA		--	Previously sampled
	23	East	225	Concrete/Brick	2	Wood trim	12.5	1	One sample on each substrate
		South	144	Concrete/Brick		Wood trim	8		
		West	225	Brick	1	Wood trim	12.5		
		North	144	Brick	1	Wood trim	8		
		Ceiling	400	Pressed tin over lath	1	(Door)	20	1	White painted
		Floor	400	Gray Painted Concrete		NA		--	Previously sampled
	24	East	144	Brick	1	None		--	
		South	135	Concrete/Brick	2	None		--	One sample on each substrate
		West	144	Brick	1	None		--	
		North	135	Unpainted plywood	--	None		--	Unpainted/coated
		Ceiling	240	Bare Lath		(Door)	20	1	
		Floor	240	Gray Painted Concrete		NA		--	Previously sampled
	24A	East	54	None	--	None		--	Small Room
		South	135	Painted plywood	1	None		--	
		West	54	Brick	1	None		--	
		North	135	Brick	1	None		--	
		Ceiling	90	Drywall over ??	1	NA		--	White painted
		Floor	90	Gray Painted Concrete		NA		--	Previously sampled

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Floor	Room	Surface¹	Approx. SF of Surface	Substrate	No. Samples	Ancillary Surfaces (if any)	Approx. SF of Surface	No. Samples	Notes / Comments:
Basement	25	East	108	Brick	1	None		--	Small room
		South	45	Brick	1	None		--	
		West	108	Brick		None		--	
		North	45	Brick		None		--	
		Ceiling	60	Drywall over Plaster/Lath	1	Door	20	1	
		Ceiling	60	Plaster/Lath	1	NA		--	
		Floor	60	Gray Painted Concrete		NA		--	Previously sampled
	25A	East	90	Brick	1	None		--	Small room
		South	135	Brick	1	None		--	
		West	90	Brick		None		--	
		North	135	Brick		None		--	
		Ceiling	150	Drywall over	1	NA		--	
		Ceiling	150	Plaster/Lath	1	NA		--	
		Floor	150	Gray Painted Concrete		NA		--	Previously sampled
	26	East	108	Brick	1	None		--	
		South	540	Concrete/Brick	2	None		--	One sample on each substrate
		West	108	CMU (newer), Drywall	--	None		--	Newer walls (no PCBs)
		North	540	CMU	1	None		--	
		Ceiling	720	Drywall over lath	1	NA		--	White painted
		Floor	720	Gray Painted Concrete		NA		--	Previously sampled
	27	East	180	Unpainted CMU	--	None		--	Unpainted/coated
		South	585	CMU	1	None		--	
		West	180	None		None		--	
		North	90	CMU (west end 10')	1	None		--	
		North	495	Brick (remainder)	1	NA		--	
		Ceiling	1,300	None	--	NA		--	Bare wood panelling
		Floor	1,300	Gray Painted Concrete		NA		--	Previously sampled
	27A	East	180	Brick	1	None		--	Partially painted
		South	45	None	--	None		--	
		West	180	CMU	1	None		--	
		North	45	Brick	--	None		--	Unpainted
		Ceiling	100	None	--	NA		--	
		Floor	100	Gray Painted Concrete		NA		--	Previously sampled

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Floor	Room	Surface¹	Approx. SF of Surface	Substrate	No. Samples	Ancillary Surfaces (if any)	Approx. SF of Surface	No. Samples	Notes / Comments:
Basement	28	East	495	Bare wood/ none	--	None		--	Unpainted/coated
		South	153	Concrete/Brick	2	None		--	One sample on each substrate
		West	495	Concrete/Brick	2	None		--	One sample on each substrate
		North	153	None	--	None		--	
		Ceiling	935	None	--	(Door)	20	1	
		Floor	935	Unpainted Concrete	--	NA		--	Unpainted/coated
	29	East	90	Bare wood	--	None		--	Unpainted/coated
		South	153	None	--	None		--	
		West	90	Concrete/Brick	2	None		--	One sample on each substrate
		North	153	Concrete/Brick	2	None		--	One sample on each substrate
		Ceiling	170	None	--	NA		--	
		Floor	170	Unpainted Concrete	--	NA		--	Unpainted/coated
	30	East	135	Brick	1	None		--	
		South	90	None	--	None		--	
		West	135	None	--	None		--	
		North	90	Concrete/Brick	2	None		--	One sample on each substrate
		Ceiling	150	Drywall over lath	1	NA		--	White painted
		Floor	150	Gray Painted Concrete		NA		--	Previously sampled
	31	East	135	None	--	None		--	Originally same room as 32, 33
		South	135	None	--	None		--	
		West	135	Brick	1	None		--	
		North	135	Concrete/Brick	2	None		--	One sample on each substrate
		Ceiling	225	Unpainted drywall	--	NA		--	Unpainted/coated
		Floor	225	Gray Painted Concrete		NA		--	Previously sampled
	32	East	135	None	--	None		--	Originally same room as 31, 33
		South	135	None	--	None		--	
		West	135	None	--	None		--	
		North	135	Concrete/Brick		None		--	Sampled in Rooms 31, 33
		Ceiling	225	Unpainted drywall	--	NA		--	Unpainted/coated
		Floor	225	Gray Painted Concrete		NA		--	Previously sampled
	33	East	135	Brick	1	None		--	Originally same room as 31, 32
		South	135	None	--	None		--	
		West	135	None	--	None		--	
		North	135	Concrete/Brick	2	None		--	One sample on each substrate
		Ceiling	225	Unpainted drywall	--	NA		--	Unpainted/coated
		Floor	225	Gray Painted Concrete		NA		--	Previously sampled

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Floor	Room	Surface¹	Approx. SF of Surface	Substrate	No. Samples	Ancillary Surfaces (if any)	Approx. SF of Surface	No. Samples	Notes / Comments:
	34	East	135	Brick	1	None		--	
		South	90	CMU	1	None		--	
		West	135	None	--	None		--	
		North	90	None	--	None		--	
		Ceiling	150	Drywall over lath	1	NA		--	White painted
		Floor	150	Gray Painted Concrete		NA		--	Previously sampled
	35	East	135	None	--	None		--	Originally same room as 36, 37
		South	45	Brick	1	None		--	
Basement	35	West	135	Brick	1	None		--	
		North	45	None	--	None		--	
		Ceiling	75	Pressed tin over lath	1	NA		--	White painted
		Floor	75	Gray Painted Concrete		NA		--	Previously sampled
	36	East	135	None	--	None		--	Originally same room as 35, 37
		South	90	Brick		None		--	Sampled in Rooms 35, 37
		West	135	None	--	None		--	
		North	90	None	--	None		--	
		Ceiling	150	Pressed tin over lath	1	NA		--	White painted
		Floor	150	Gray Painted Concrete		NA		--	Previously sampled
	37	East	135	Brick	1	None		--	Originally same room as 35, 36
		South	270	Brick	1	None		--	
		West	135	None	--	None		--	
		North	270	None	--	None		--	
		Ceiling	450	Pressed tin over lath	1	NA		--	White painted
		Floor	450	Gray Painted Concrete		NA		--	Previously sampled
Total Wall					68			--	
Total Floor Coating					2			--	
Total Ceiling					16			--	
Total Steps/Rails					1			1	
Total Wall Trim					--			1	
Total Doors					--			7	
Total Basement					87			9	

Table 2c
PCB Paint and Coating Samples
St. Johnsbury Armory
St. Johnsbury Vermont
Page 9 of 9

Floor	Room	Surface¹	Approx. SF of Surface	Substrate	No. Samples	Ancillary Surfaces (if any)	Approx. SF of Surface	No. Samples	Notes / Comments:
Exterior									
NA	Front Entrance - Surround		50	Wood	3	None		--	White painted
NA	Front Entrance - Door		64	Wood	3	None		--	Dark Green painted
NA	Front Entrance		100	Concrete	3	None		--	White painted
NA	North basement stairwell		200	Concrete	3	None		--	Multi-color painted
NA	Front Steps Handrails		40 LF	Metal	3	None		--	Black painted
NA	Window Frames		80	Wood	3	None		--	White painted
NA	Window Sashes		80	Wood	3	None		--	Dark Green painted
NA	Ceiling of North central roofover steps		150	Wood	3	None		--	White painted
NA	Roof Edge Trim/Soffits		400	Wood	3	None		--	White/gray painted
NA	Southwest Loading Ramp		600	Concrete	3	None		--	Gray painted
NA	Southwest Loading Ramp Roof		300	Wood Trim/Soffit/Door & Sheet Metal walls	3	None		--	White painted
					33			0	
Total Main Surfaces/Ancillary Breakdown					232			42	
Total Paint/Coatings					274				
Duplicate Samples					14				
Grand Total Paint/Coatings					288				

Notes:
1. Directional Descriptor used for Walls
SF = Square feet
LF = Linear feet
Sample list from *Workplan for Additional Hazardous Building Materials Samping* , Atlas Technical Consultants, 2023

Table 2d
Sub-Slab Soil PCB Samples
St. Johnsbury Armory
St. Johnsbury Vermont
Page 1 of 1

Material Type / Material ID	Material Location	Number of Samples
Soil	Room 21	1
Soil	Room 23	1
Soil	Room 25A	1
Soil	Room 27	1
Soil	Room 31	1
Total Soil Samples		5
Duplicate Samples		1
Grand Total Soil Samples		6

Sample locations from *Workplan for Additional Hazardous Building Materials Sampling* , Atlas Technical Consultants, 2023

Table 3
Sample Containers, Preservation, and Holding Time by Matrix and Analysis
St. Johnsbury Armory
St. Johnsbury, Vermont

Analytical Parameter	Analytical Method	Containers required for each sample (number, size, and type)	Preservation Requirements (chemical, temperature)	Maximum Holding Time (from time of sample collection)
Asbestos	PLM	Ziploc bag	None	None
Asbestos	TEM	Ziploc bag	None	None
PCBs	3540C/8082A	1 x 4 oz. amber glass jar	Cool to 4°C	Not Applicable

Notes:

PCBs=polychlorinated biphenyls

PLM=polarized light microscopy

TEM=transmission electron microscopy

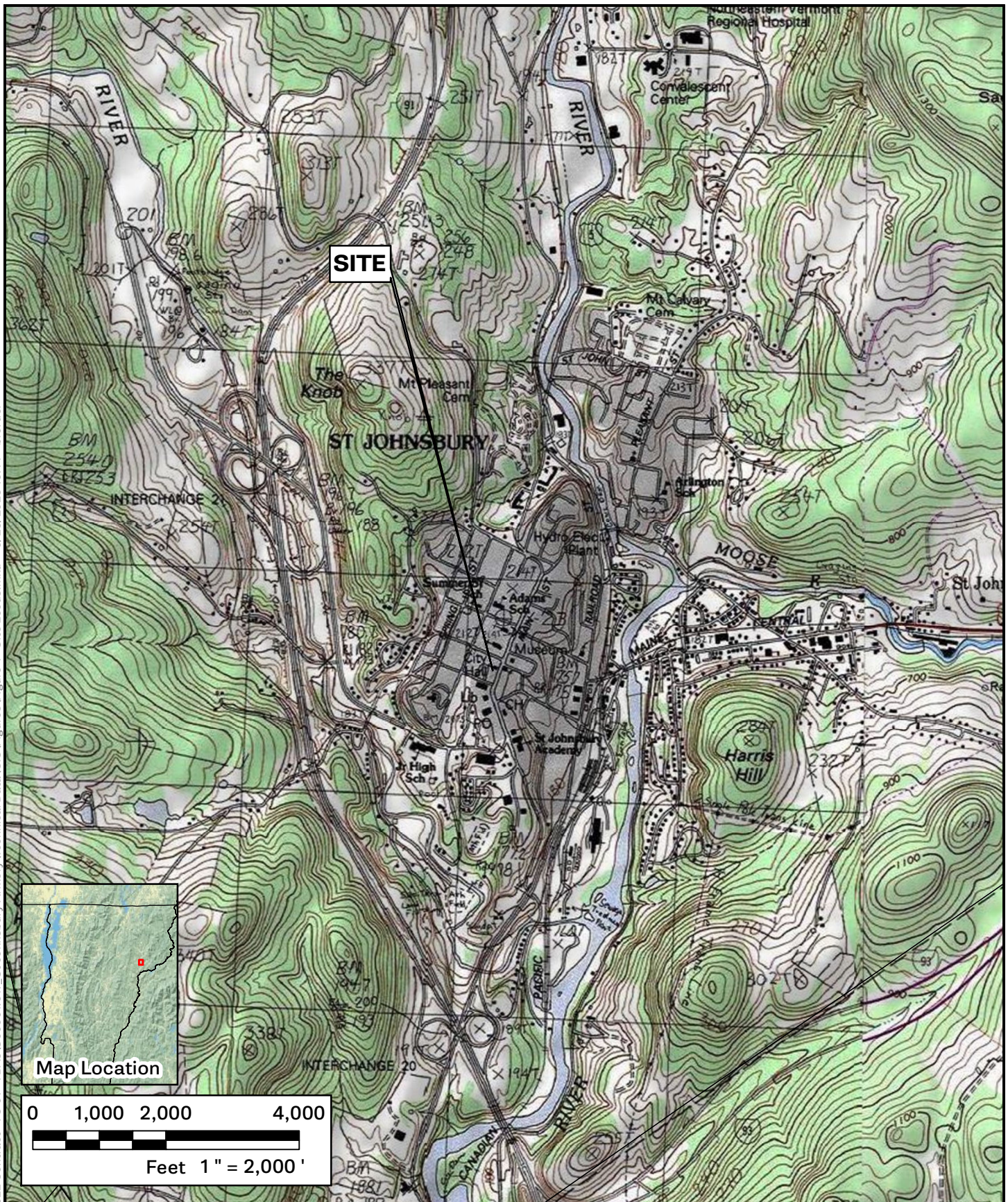
Table 4
Project Specific Action Limits and Laboratory Reporting Limits
St. Johnsbury Armory
St. Johnsbury, Vermont
Page 1 of 1

Chemical Name	CAS Number	Project Action Limits	Laboratory Quantitation Limits ¹
Hazardous Materials Survey Parameters			
Asbestos PLM	1332-21-4	≥1%	<1%
Asbestos TEM	1332-21-4	≥1%	95% confidence of 1 confirmed structure
Polychlorinated Biphenyls (PCBs)			
Aroclor-1016	12674-11-2	--	0.02
Aroclor-1221	11104-28-2	--	0.02
Aroclor-1232	11141-16-5	--	0.02
Aroclor-1242	53469-21-9	--	0.02
Aroclor-1248	12672-29-6	--	0.02
Aroclor-1254	11097-69-1	--	0.02
Aroclor-1260	11096-82-5	--	0.02
Aroclor-1262	37324-23-5	--	0.02
Aroclor-1268	11100-14-4	--	0.02
Total PCBs (all Aroclors)	NA	1	--

Notes:

1. Laboratory QLs for asbestos are based on EMSL method limits, laboratory QLs for PCBs are based on Con-Test method limits.
2. PCBs are in units of parts per million (PPM).

FIGURES



USGS Topographic Map
St. Johnsbury Vermont
Revised 1983



FIGURE 1

SITE LOCUS
ST JOHN SBURY ARMORY
1249 MAIN STREET
ST. JOHN SBURY VT

PREPARED BY: BF

CHECKED BY: TA

PROJECT NO. S00001.017

DATE: JULY 2023

J:\S00001.000-START 2022 Contract - TO 01 - TBAs\S00001.017_ St. Johnsbury Armory\Technical Data\GIS\Figures\Figure 2 - Site Plan.mxd 6/23/2023 19:06 bfortier



Notes:

1. Locations of site features depicted hereon are approximate and given for illustrative purposes only.
2. Parcel data provided by Vermont Center for Geographic Information.

Legend

-  Target Property
-  Property Boundaries

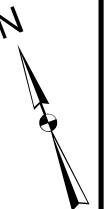
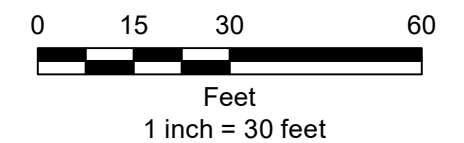


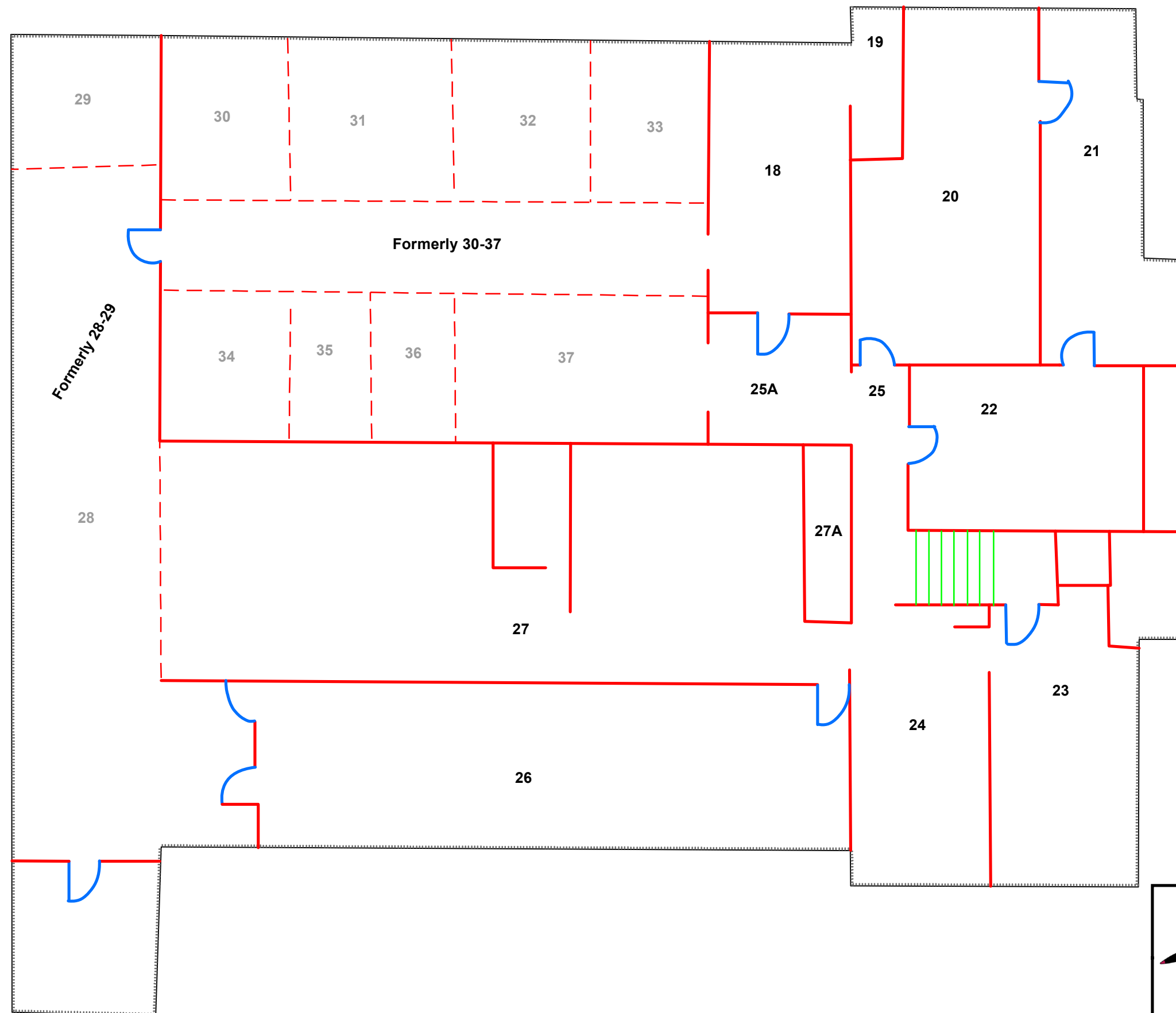
FIGURE 2

SITE PLAN
FORMER ST. JOHNSBURY ARMORY
1249 MAIN STREET
ST. JOHNSBURY, VERMONT

PREPARED BY: BF
PROJECT NO. S00001.017

CHECKED BY: TA
DATE: JULY 2023

J:\S00001.000-START 2022 Contract - TO 01 - TBAs\S00001.017_St. Johnsbury Armory\Technical Data\GIS\Figures\Figure 3a Rev 2.mxd 6/27/2023 15:08 bfortier



Notes:

1. Locations of site features depicted hereon are approximate and given for illustrative purposes only.
2. Former rooms and numbers derived from figures in Atlas Technical Consultants, Workplan for Additional Hazardous Building Materials Sampling, 2023
3. Grayed out room numbers indicate the room no longer exists however it is called out as a sampling area in the Atlas Workplan and is included on this site plan.

Legend

- Basement Door
- Basement Stairs
- Basement Wall
- Former Basement Wall
- Basement Footprint

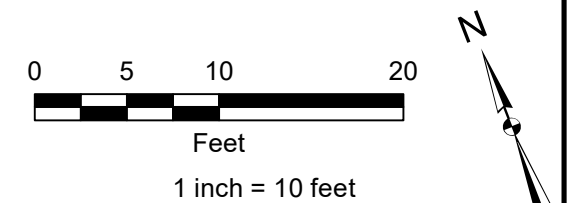


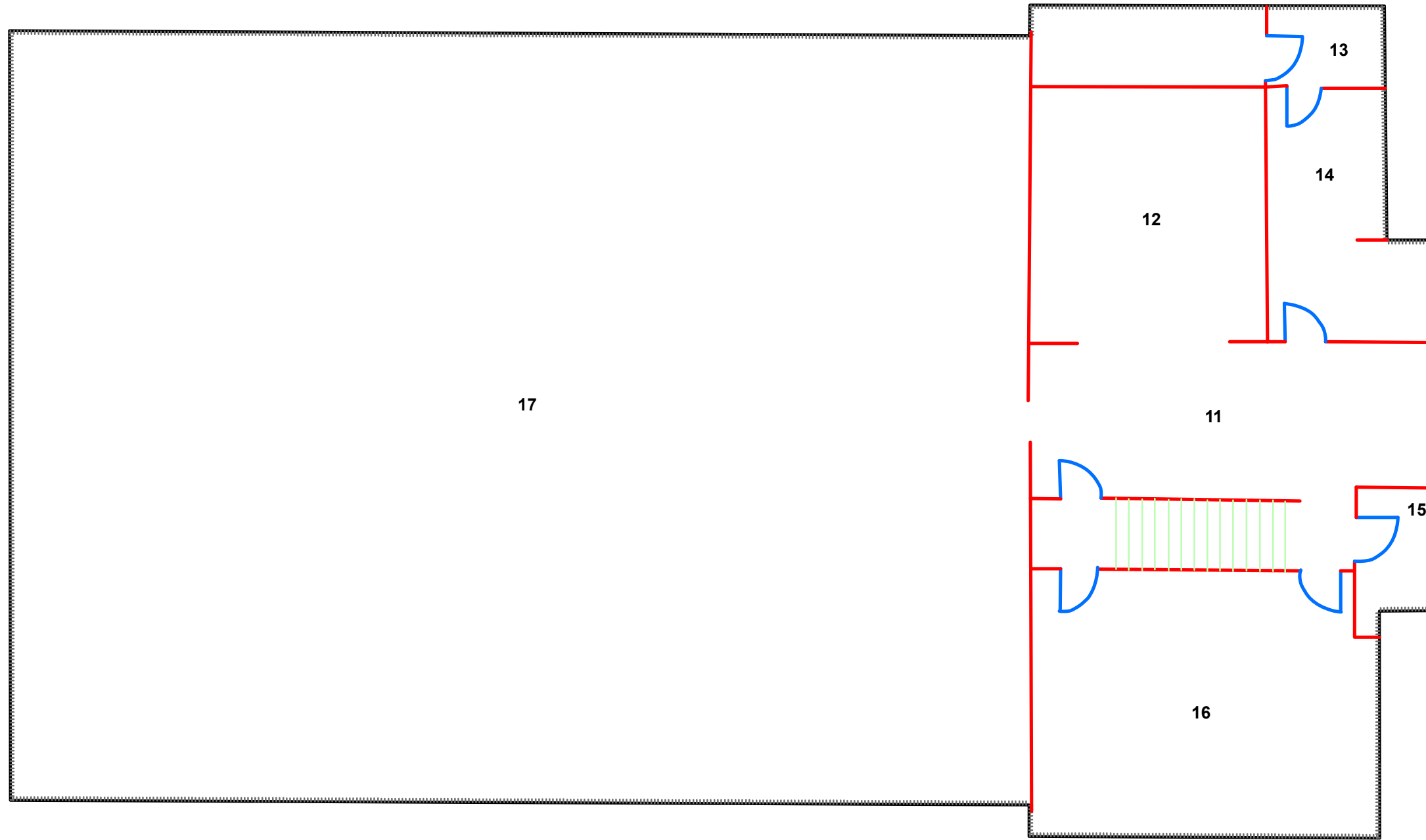
FIGURE 3a

BASEMENT LAYOUT
ST. JOHNSBURY ARMORY
ST. JOHNSBURY, VERMONT

PREPARED BY: BF	CHECKED BY: TA
PROJECT NO. S00001.017	DATE: JULY 2023



J:\S00001.000-START 2022 Contract - TO 01 - TBAs\S00001.017_St. Johnsbury Armory\Technical Data\GIS\Figures\Figure 3b_Rev2.mxd 6/27/2023 14:26 bfontier



Notes:
1.Locations of site features depicted hereon are approximate and given for illustrative purposes only.

- Legend**
- 1st Floor Door
 - 1st Floor Stairs
 - 1st Floor Wall
 - Floor Footprint

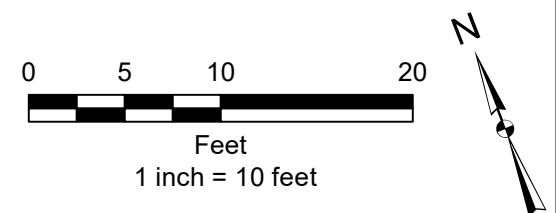
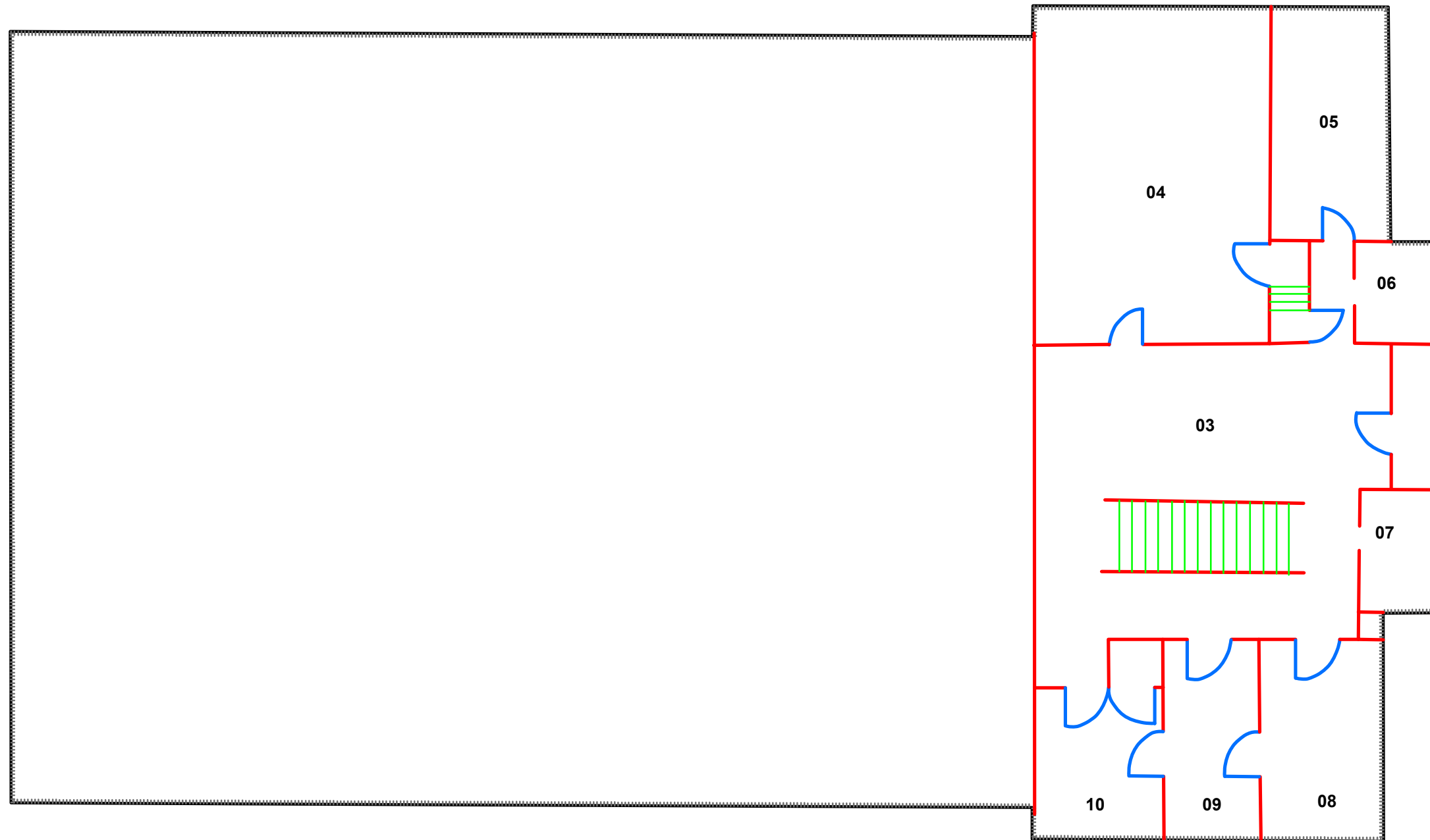


FIGURE 3b	
FIRST FLOOR LAYOUT ST. JOHNSBURY ARMORY ST. JOHNSBURY, VERMONT	
PREPARED BY: BF	CHECKED BY: TA
PROJECT NO. S00001.017	DATE: JULY 2023

J:\S00001.000-START 2022 Contract - TO 01 - TBAs\S00001.017_St. Johnsbury Armory\Technical Data\GIS\Figures\Figure 3c Rev2.mxd 6/27/2023 15:35 bfontler



Notes:

1. Locations of site features depicted hereon are approximate and given for illustrative purposes only.

Legend

- 2nd Floor Door
- 2nd Floor Stairs
- 2nd Floor Wall
- Floor Footprint

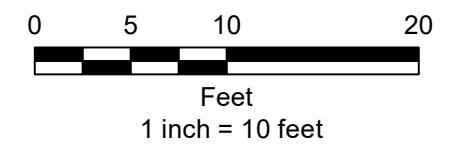


FIGURE 3c

SECOND FLOOR LAYOUT
ST. JOHNSBURY ARMORY
ST. JOHNSBURY, VERMONT

PREPARED BY: BF	CHECKED BY: TA
PROJECT NO. S00001.017	DATE: JULY 2023

A P P E N D I X A



WORKPLAN FOR ADDITIONAL HAZARDOUS BUILDING MATERIALS SAMPLING

FORMER ST. JOHNSBURY ARMORY
1249 MAIN STREET
ST. JOHNSBURY, VERMONT 05819
VTDEC SITE #2012-4326

PREPARED FOR:

TOWN OF ST. JOHNSBURY
3 RANDOLPH STREET
ST. JOHNSBURY, VERMONT 05819

PREPARED BY:

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ATLAS PROJECT 280BS02530

FEBRUARY 21, 2023
REVISED MARCH 20, 2023

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1249 Main Street
St. Johnsbury, Vermont 05819
VTDEC Site #2012-4326

File Reference Additional Sampling Workplan 3-20-23Rev.docx

Job Reference Atlas Project No. 280BS02530

Date February 21, 2023
Revised March 16, 2023

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Document Control

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Draft	2/9/23	Daniel P. White		Kevin Ignaszak, Stantec	KDI
Draft	2/9/23	Daniel P. White		Tom Salimeno, Stantec	TS
Final Draft	2/17/23	Daniel P. White		Joe Kasprzak, St. Johnsbury	JK
Final	2/21/23	Daniel P. White		NA	
Revision 1, Draft	3/16/23	Daniel P. White		Kevin Ignaszak, Stantec	KDI

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Table 2:	Number and Locations of Samples to be collected from Suspect PCB Paint/Coatings
Table 3:	Samples to be Collected from Suspect Asbestos Materials
Table 4:	Samples to be Collected for Lead Waste Characterization (in text)

Figures

Figure 1:	Site Vicinity Map
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Appendices

Appendix A:	Floor Plans (Basement, First Floor, Second Floor)
Appendix B:	Tables of Historical PCB and Asbestos Data
	Table 1 – Summary of Positive Asbestos Analytical Results
	Table 2 – Summary of Negative Asbestos Analytical Results
	Table 3 – Suspect PCB Source Material Analytical Results
Appendix C:	Photograph Log of Suspect PCB-Containing and Asbestos Materials to be Sampled

1 Introduction and Background

Atlas Technical Consultants (Atlas) is pleased to present this Workplan for additional building material and sub-slab soil sampling at the former St. Johnsbury Armory building at 1249 Main Street in St. Johnsbury, Vermont (Site), VTDEC Site #2012-4326.

Figure 1, Locus Map, depicts the Site location with respect to surrounding landmarks, topography, and physical features. The floor plan drawings in Appendix A depict the major exterior and interior features of the building, including walls and stairways.

The building was constructed in the early 1900s, originally as an armory building. It has been vacant for the past 5-10 years. The Town of St. Johnsbury plans to renovate the building into a public safety building. Architectural plans call for demolishing the rear (western) portion of the building (the portion that includes the gym and has a gambrel roof). The front (eastern) portion of the building would be gut renovated.

Surveying and sampling of hazardous building materials at the building, including field analysis of lead-based paint (LBP) and laboratory analysis of sampled materials for asbestos, polychlorinated biphenyls (PCBs), and lead-based paint (LBP), has been conducted in 2008, 2012, 2017, and 2021, as reported in the following documents:

Crothers Environmental Group LLC, *Limited Interior Asbestos Inspection*, November 1, 2008

Survey included initial inventory and sampling of building materials for asbestos (bulk material samples).

Cardno ATC, *Environmental Survey*, March 28, 2013

Survey included initial inventory and sampling of building materials for asbestos and PCBs (bulk material samples), lead paint testing (on-site), lead dust wipe sampling, mold testing (air and wipe samples), and investigation of floor drain system.

ATC Group Services LLC, *PCB Building Material Survey*, March 3, 2017

Survey included additional inventory and sampling for PCBs (bulk source material, wipe, indoor air, and concrete floor slab substrate samples).

KGSNE, LLC, *Draft Targeted Brownfields Assessment Report*, March 9, 2021

Survey included additional inventory and sampling for asbestos and PCBs (bulk material samples), lead paint testing (on-site), regulated/universal waste survey, and mold survey and sampling.

2 Objectives

In order to develop bid documents and a hybrid Risk/Performance-based Clean-up and Disposal Plan for abatement of PCB-containing materials to be submitted to the U.S. Environmental Protection Agency (EPA) in accordance with the requirements of the Toxic Substance Control Act (TSCA), 40 CFR 761, additional sampling is needed to fill data gaps in our understanding of the distribution of hazardous building materials at the Site, and provide waste characterization data that will be needed for disposal of waste generated during renovation/demolition of the building. In addition, sub-slab soil sampling is needed to confirm that PCBs have not migrated into the soil underlying the building.

To meet these objectives, certain additional suspect building materials will be sampled for PCB and asbestos analysis, and sub-slab soil will be sampled for PCB analysis. Building substrate materials (e.g. brick, concrete) underlying suspect PCB-containing materials may be sampled. Composite samples of building materials expected to be representative of the waste streams requiring off-site disposal will also be collected for analysis of lead using the Toxicity Characteristics Leaching Procedure (TCLP) extraction method, to determine if the materials to be disposed off-site would be classified as hazardous waste under state and federal regulations.

3 Project Coordination

Prior to mobilizing to the Site, Contractor shall prepare documents required by contract, including:

Site-Specific Health and Safety Plan (HASP)

The HASP shall be prepared to meet state and federal health and safety regulations that relate to disturbance and sampling of the types of hazardous materials that may be encountered at the Site.

At a minimum, personal protective equipment (PPE) shall reflect a Level D ensemble, including, when sampling, a Tyvek (or equivalent) suit, Tyvek (or equivalent) shoe coverings, and a half-face respirator with particulate cartridges.

The HASP shall also address decontamination procedures and disposal plans for used PPE.

Site-Specific Quality Assurance Project Plan (SSQAPP)

Contractor shall prepare a SSQAPP to meet EPA requirements. The SSQAPP shall outline sampling protocols as well as quality assurance / quality control (QA/QC) procedures both in the field and laboratory, and incorporate industry best practice as well as applicable state and federal guidelines for sampling of hazardous building materials and soil.

Contractor shall coordinate all work with the Town of St. Johnsbury to access the building. Contractor shall assume that electricity and water are not available in the building. However, Contractor shall treat all electrical and water services as if they may still be active and energized. Lighting will also need to be provided. Public restroom facilities are available within two blocks of the Site at the Town of St. Johnsbury welcome center.

An Atlas senior field technician will be available on-Site the first day of Phase 1 sampling to help kick-off sampling, answer questions, and/or help clarify materials and/or methods of sampling. The Contractor shall coordinate date and time of meeting with Atlas at least 2 weeks prior to scheduled sampling event.

4 Overview of Sampling Program

The additional survey will be including sampling and laboratory analysis of building materials suspected to contain PCBs and asbestos, sampling of sub-slab soil for PCB analysis, possible sampling of building substrate materials (e.g. brick) for PCB analysis, and collection of composite samples of projected demolition waste streams for TCLP lead analysis. The results of the PCB components of the survey will be utilized to prepare and submit a Risk-based Clean-up and Disposal Plan for review and approval by the EPA PCB Coordinator, Region I. The results of all sampling will be used to prepare bid documents for the project.

Attached in Appendix A are floor plans for the building showing the location of previously collected suspect source building materials analyzed for PCBs, where those locations are known. Comprehensive tables of asbestos-containing materials (ACM) and PCB sample results of suspect materials are also attached in Appendix B (Tables 1 and 2 for ACM, Table 3 for PCBs) for reference. The comprehensive ACM tables are those included in the 2021 KGSNE report, while the PCB table is a compilation of suspect PCB source material data from prior reports. These tables do not depict data for indoor air, wipe, or substrate (i.e. basement concrete slab) samples analyzed for PCBs.

Specific materials identified for sampling are detailed in the next section. PCB source material samples will be collected for surface coatings (paints and floor coatings) that were not previously sampled, as well as a few additional suspect sealants and other materials that were not previously sampled. Based on initial results, sampling of exterior brick and/or interior masonry materials (brick, concrete, CMU block) may be required. Samples of sub-slab soil beneath the basement floor will also be collected for PCB analysis.

A number of additional suspect ACM materials that were not previously sampled will be sampled as well for asbestos analysis.

Finally, there are likely to be several separate waste streams resulting from this project based upon PCB category under TSCA and asbestos content, and each will be sampled separately for TCLP lead analysis.

Sampling is proposed in two phases:

- Phase 1 will include the large majority of proposed sampling described in Section 5, following the procedures outlined in Section 6.
- Phase 2 will be conducted after data from the Phase 1 is received and reviewed by Atlas and the Town of St. Johnsbury, who will provide further details/ instructions on the number and location of samples to be collected, within one week of receipt of data from Contractor. The types of samples to be collected in Phase 2 include lead waste stream characterization samples (as described in Sections 5.3 and 6.3), asbestos material samples (as described in Sections 5.2 and 6.2), and potential masonry substrate samples (as described in Section 5.1 and 6.1). The Phase 2 work should be conducted within one week of receipt of sampling instructions from Atlas.

5 Detailed Inventory of Materials to be Sampled

This section provides a detailed inventory of suspect PCB, asbestos, and lead waste building materials to be sampled (Sections 5.1 through 5.3), including types, descriptions, and locations of each suspect material. Materials that were adequately sampled in the past are not mentioned in this section, and this section does not include a detailed inventory of all suspect materials or sample data for the Site. Section 5.4 provides a description of soil to be sampled for PCB analysis.

5.1 Suspect PCB Materials

Samples of suspect PCB sealant/caulking and other materials should be collected from the specific materials identified in Table 1 below. A photograph of some of the suspect materials to be sampled is provided in the photograph log in Appendix C.

Table 1
Samples to be collected from Suspect PCB Materials (Other than Paints/Coatings)

Material Type / Material ID	Material Description	Material Location	Quantity of Material	Number of Samples	Location(s) of Samples	Appendix C Photograph Reference No.
Caulk / #1	Caulk bead – characteristics unknown	Exterior - Between back edge of soffit and brick wall; north and south sides of building; a portion is hanging down on north side	70 LF	3	North side of building	1
			70 LF	3	South side of building	1
Caulk / #2	White	Exterior – Roofline intersection (sloping portion) between east and west portions of building, at top of metal flashing and in joint between roof and wall.	30 LF	3	North side of building	2
Caulk / #3	White	Exterior – Small roof over southwest loading ramp roofline intersection with brick wall, at top of metal flashing.	10 LF	3	Southwest side of building over loading ramp	3
Caulk (if present) / #4	Characteristics Unknown	Exterior – Small roof over central steps to basement; at roofline intersection with brick wall.	15 LF	3	Small roof over north central stair to basement	4
Caulk / #5	White	Chimney – Copper Flashing – along top edge	1 LF	1	Chimney	5
Celotex board / #14	Brown fibrous board	Room 6 (loose panels), Room 10 (walls of closet). Collect samples of unpainted material.	100 SF	3	Room 6 (loose panels), Room 10 (walls of closet)	9

Material Type / Material ID	Material Description	Material Location	Quantity of Material	Number of Samples	Location(s) of Samples	Appendix C Photograph Reference No.
Black Paper / #19	Black	Room 5, behind wood paneling? (observed in gap between window trim and paneling)	Up to 480 SF	3	Room 5	12
Beige Mastic / #24	Beige	Room 13, 14, on wood floor	284 SF	3	Room 13, 14	16
Carpet Mastic / #26	Remnant carpet mastic	Room 12, remnant carpet fibers on wood floor	Up to 360 SF	3	Room 12	17
Black Mastic / #28	Black, VCT mastic	Room 18, on underside of VFT	340 SF	3	Room 18	20
Old Linoleum Mastic / #33	Unknown	Room 15, may be present beneath old "Battleship" linoleum	75 SF	3	Room 15	23

Notes: LF = Linear feet
SF = Square feet

Walls, ceilings, and some floors in the Site building have been painted many times, as evidenced by the many layers of paint of various colors that have been observed on various building surfaces. Ideally, individual layers of paint would be sampled individually for PCBs. However, given the many layers of paint present, this approach is infeasible. Instead, Atlas has outlined a spatial sampling approach, with collection of the full thickness of paint (to the underlying substrate) at systematic intervals throughout the building. This sampling approach has been guided by the following understanding of how paint may have been applied in the past:

1. Newer layers of paint (surficial) are <44 years old and would not contain PCBs since PCBs were banned in 1979. This includes many of the multi-color paintings/murals present in some rooms, such as basement Room 21. **Currently visible surface layers of paint cannot be used to distinguish "homogenous" areas of paint that may contain PCBs; i.e., current surface paint colors are irrelevant to evaluation of PCBs in paint.**
2. In most rooms, there are too many layers of paint to be able to segregate out different colors for sampling/analysis. In addition, it is difficult/impossible to know which underlying layers of paint (other than the superficial layer) are present within a room. Identifying the number of layers of paint or which colors are present at any particular location is infeasible and impractical in most cases.
3. During past historical painting of rooms, it is most likely that entire walls were coated, rather than parts of walls (such as a different color on the top half of a wall than bottom half, as is currently present for some more recent superficial layers of paint). Therefore, a sample collected anywhere vertically on a wall is likely to include the same layers of paint.
4. Despite the conclusion in #3 above, different wall substrates may have been painted with different paints/coatings (e.g. concrete foundation vs. overlying brick on the same wall in the basement). Therefore, in some locations/rooms, the paint from both substrates should be sampled.
5. Rooms in the same portion of the building (e.g. basement western portion, 2nd floor, etc.) are likely to have similar paints on the walls all or most of the rooms in that area of the building, since their uses would presumably have been generally similar and they may have been updated/maintained (i.e. painted) at the same time.

6. To most reliably detect PCBs that may be present in any of the many layers of paint on walls/ceilings, a systematic approach is best, with a specified number of full-depth paint samples being collected from each room/surface. This will ensure that all layers/colors of paint are included in the assessment.

A detailed inventory of the building is included in Table 2, including identification of the substrate material(s) for the main wall surfaces (east, west, north, south), ceiling, and floor in each room of the building, along with any painted ancillary surfaces (such as trim). Each wall/ceiling/floor surface is painted, unless otherwise noted in the table. The inventory also includes exterior painted structures/surfaces (such as window frames, railings, etc.). Note that the ceiling in the gymnasium is approximately 25-30 feet at its highest point (sloping down to 11 feet at the sides) and girders in the gymnasium are approximately 18-20 feet above the floor; paint on each of these surfaces is to be sampled.

The Contractor shall collect the indicated number of full-depth paint/coating sample(s) from each surface (e.g., wall, ceiling, floor) or ancillary substrate as indicated in Table 2. Procedures for selecting sample locations and collecting samples are provided in Section 6.1.

Duplicate samples shall be collected at a minimum rate of 1 per 20 samples (5%). Duplicate samples shall be collected using the same procedures as the original sample, from material immediately adjacent to the original sample material. Duplicate samples shall be collected from scattered areas throughout the building, rather than concentrated in any area(s).

If exterior caulking materials are determined to contain PCBs at a concentration >50 ppm, it will be necessary to sample adjacent brick on the façade of the building. Samples of masonry substrate materials (i.e. brick, concrete, CMU block) on the interior may also be needed if PCBs in interior paint contain PCBs at a concentration >50 ppm. (Note that the concrete floor slab in the basement has already been classified, and no further sampling of this surface is needed.) This sampling would be conducted as a Phase 2 scope of work, after caulking and paint laboratory data is reviewed by Atlas and the Town of St. Johnsbury, who will provide instructions for the number and locations of brick samples. The assumed level of effort for this sampling would be:

- Exterior brick sampling - collection of 18 samples from elevated locations on the façade of the building, plus one duplicate sample.
- Interior masonry sampling – collection of 62 samples from wall locations in the basement and gym, plus 4 duplicate samples.

Exterior brick and interior masonry sampling procedures are outlined in Section 6.1.

5.2 Suspect Asbestos Materials

Atlas has reviewed past reports to identify suspect asbestos materials that were previously sampled, and conducted a visual inventory of suspect materials at the Site on January 11, 2023. Materials described in this section are suspect asbestos materials identified on January 11, 2023 that have not previously been sampled.

Samples of suspect asbestos materials should be collected from the specific materials identified in Table 3. A description of each material, approximate quantity, and location where each material is present is provided in Table 3. A photograph of each suspect material to be sampled is provided in the photograph log in Appendix C.

Table 3 includes sampling of any suspect material that may be hidden behind the brick façade of the building. A sufficient number of exploratory removals of brick on interior and exterior shall be conducted, on both the eastern and western portions of the building, to identify whether any hidden suspect materials exist. Locations for removal of brick for eastern portion of building shall be coordinated with Town of St. Johnsbury, since this portion of the building is being renovated.

Contractor shall open vent covers in Rooms 7 and 15 to evaluate whether any suspect materials exist behind them. The vents appear to enter a vertical chase, as can be observed at the south side of each of these rooms on the Floor Plans in Appendix A. Contractor shall perform exploratory work to inspect inside of chase to identify whether any suspect materials exist, and sample any that are identified.

During the course of Phase 1 sampling, if the Contractor identifies any other suspect asbestos materials, the Contractor shall contact Atlas to describe the material and location, and receive feedback on whether this material should be included in the sampling effort. If Atlas recommends that a specific material be sampled, Contractor shall collect an appropriate number of samples to characterize that material.

5.3 Lead Waste Characterization Samples

There are likely to be several separate waste streams resulting from this project, classified based upon PCB category under TSCA, and asbestos content. Three possible categories are outlined in the table below. A composite sample of each will be collected for TCLP lead analysis during Phase 2 of sampling. The specific categories of material (it is assumed there will be three categories), materials to be collected for each composite sample, and location(s) of grab sample collection will be determined by Atlas and the Town of St. Johnsbury following receipt of Phase 1 PCB and asbestos data from the Contractor. Once the data are received, they will be reviewed and the sampling program will be provided to the Contractor to implement during Phase 2 of the sampling program. Procedures for collecting the composite samples are outlined in Section 6.3, so that Contractor can understand the level of effort involved.

Table 4
Samples to be collected for Lead Waste Characterization

Possible Waste Stream	Material Description	Material Location(s)	Location(s) of Samples
Building materials classified as TSCA Bulk Product materials (>50 ppm) including source materials (i.e. paint) and adjacent substrate materials (e.g., concrete, brick)	To be determined following receipt of PCB and asbestos data		
Building materials classified as TSCA Excluded PCB Product materials (<50 ppm) including source materials and adjacent substrate materials (e.g., concrete, wood)	To be determined following receipt of PCB and asbestos data		
Building materials that are painted but are not classified as either of the above PCB categories	To be determined following receipt of PCB and asbestos data		

5.4 Soil Sampling under Basement Floor Slab

Samples of soil from immediately beneath the concrete basement floor slab shall be collected for PCB analysis. Five samples shall be collected as individual grab samples from Rooms 21, 23, 25A, 27, and 31, with the actual sample location in each room determined by the Contractor. Preference for sample location in each room shall be given to a location at or near any visible holes or cracks in the floor slab. Detailed sampling and analytical procedures are provided in Section 6.4.

6 Sampling Procedures

Specific sampling guidelines and procedures for each type of hazardous material are provided below.

All sampling outlined in this Workplan shall be conducted by qualified inspector(s) who are Vermont-licensed asbestos inspectors.

Due to loose PCB-containing floor paint and possible asbestos-containing debris in the basement level, the entire basement floor shall be vacuumed using a vacuum equipped with a High Efficiency Particulate Air (HEPA) filter prior to performing any sampling in the basement. The vacuuming shall be conducted by a Vermont-licensed asbestos abatement contractor and personnel, in accordance with state and federal regulations and guidelines. All solid materials collected via vacuuming shall be containerized in a sealed, labeled container, and Contractor shall arrange for off-site disposal of the waste as according to relevant state and federal regulations, including classification of the material as ACM and PCB Remediation Waste with total PCBs >50 ppm, unless waste characterization sampling of the generated waste is conducted that shows that the waste does not need to be classified as such.

6.1 Suspect PCB Building Materials

For each homogeneous paint/coating and sealant material identified for PCB sampling in Section 5.1, Contractor shall collect representative 5-10 gram samples (exact mass required shall be confirmed with selected laboratory).

For paint/coating samples, sample locations shall be located in the room (e.g., Room 12) and surface (e.g., ceiling, west wall, trim) as specified in Table 2. Samples may be collected from more than one substrate (e.g., plaster, brick) on the same wall, as indicated in Table 2. For paint samples, Contractor shall collect a sample representative of the full thickness of wall paint (all layers); no effort to collect individual layers of paint shall be expended. Paint samples shall not be collected where paint is peeling or chipping; instead, a smooth and intact location shall be selected for each sample. Prior to sampling, Contractor shall use a water-wetted paper towel to hand wipe the sampling area prior to collecting the sample, with the objective of removing dust or surface grime.

Sampling nomenclatures shall be developed so that each sample ID uniquely identifies the sample, including but not limited to the room number (or "Ext" for Exterior), surface (e.g., "ES" for east wall, "ceiling", "floor", "window frame"), and material type (e.g., "paint", "coating", "caulking", "brick"). Field notes collected during sampling should also indicate date and time of collection, description of location, underlying substrate (if any), height of sample off floor (if a wall paint sample), and include floor plan notations showing the exact location of the sample. The sample information/ID for each sample shall be written on the surface (e.g. on the painted wall next to collected sample of paint) and the sample location documented with photograph(s).

Repair of sample locations is not required, except for exterior caulking materials on the front (eastern) portion of the building. At these locations, inspector shall use exterior-grade acrylic caulk, gray in color, to recaulk locations where caulk samples are collected.

Sampling tools shall be decontaminated between samples by first removing gross contamination, and then performing a final wipe using a clean hexane-wetted paper towel. Alternatively, a disposable tool/blade can be used for each sample.

All samples shall be placed in laboratory-supplied jars and transported under chain-of-custody protocol to a certified laboratory for PCB analysis in accordance with the EPA 3540C soxhlet extraction method and SW-846 8082 Aroclor analytical method.

For potential exterior brick samples from the façade of the building, or interior masonry wall samples, to be collected as a Phase 2 scope of work as noted at the end of Section 5.1, procedures shall generally follow those noted above, with the following exceptions:

- Samples shall be collected at locations to be provided by Atlas and the Town of St. Johnsbury following receipt of data from Phase 1 sampling.

- Samples shall be collected using hand tools or a drill/hammer drill, with decontamination procedures the same as noted above.
- If interior samples of a painted masonry material (i.e. brick, concrete, or CMU block) are to be collected, paint shall first be completely removed from the sample location by scraping with decontaminated hand tools, followed by scrubbing with a wire brush. The wire brush shall be decontaminated between samples by physical removal of any gross contamination followed by dipping the brush in hexane.
- If samples of brick are requested at a caulk line (i.e. where caulking touches brick), the caulking shall first be completely removed from the brick surface prior to sampling the brick, so that the brick sample is representative of PCB contamination in brick only, without cross-contamination caused by the presence of residual caulking.
- Samples shall be collected with equal volumes of brick or other masonry material from the surface of the material to a depth of ½-inch into the material, following procedures outlined in the EPA document *Standard Operating Procedure for Sampling Porous Surfaces for PCBs*, EIASOP_PORO USSAMPLING, Revision 4, 5/5/11.

6.2 Suspect Asbestos Materials

Using the information provided in Section 5.2, Contractor shall identify each described homogeneous suspect material in the building, and select appropriate sample locations for the identified number of samples to be collected from that material.

The Contractor shall use a State of Vermont licensed and accredited Asbestos Inspector to perform the sampling of suspect asbestos materials. Sampling shall be performed using standard industry methods in accordance with appropriate state and federal guidance and regulations, including EPA Asbestos Hazard Emergency Response Act (AHERA) 40 Code of Federal Regulations (CFR) Part 763 and Vermont Regulations for Asbestos Control (VRAC) VSA Title 18, Chapter 26. Exploratory demolition may be needed to access certain materials identified for sampling (e.g., roofing materials under roof slate tiles). Repair of sample locations is not required, except for roof-level materials identified for sampling. For these roofing materials, a Vermont-licensed roofing contractor shall be hired to repair any cuts and/or penetrations made.

Asbestos bulk samples shall be delivered to a Vermont-certified laboratory for analysis of asbestos utilizing the Polarized Light Microscopy (PLM) method (EPA/600/R-93/116), with a standard turn-around time (maximum one week from receipt at the laboratory). Non-friable Organically Bound (NOB) materials shall be analyzed via PLM with gravimetric reduction. In an attempt to reduce the number of samples requiring analysis, the Contractor shall instruct the laboratory to stop analysis of samples from a specific homogeneous material after an analysis indicates that the first sample of that material contains 1% or greater asbestos (Positive Stop). Any materials found to contain <2% asbestos by PLM analysis shall be analyzed via 400 point count. Any NOB material for which all samples are found to contain <1% asbestos via PLM analysis shall be re-analyzed using Transmission Electron Microscopy (TEM)-NOB.

6.3 Lead Paint Characterization Samples

To determine whether typical waste streams from the demolition/renovation of the building contain lead at levels exceeding state/federal concentrations that would require classification of the waste as a hazardous waste, Contractor shall collect composite samples for laboratory analysis of TCLP lead. To allow Contractor to determine level of effort, Atlas estimates that three composite samples will be collected.

As noted in Section 5.3, the exact materials to be sampled and location of samples will be provided to Contractor after Atlas and the Town of St. Johnsbury review the PCB and asbestos data collected as Phase 1 of this project. Therefore, Contractor shall expect to collect these samples in a Phase 2 effort.

Contractor shall collect one representative composite sample of each of the three waste streams using hand or power tools. Each composite sample shall consist of five, 20-25 gram grab samples (exact mass required for each composite sample shall be confirmed with selected laboratory) of the building materials to be specified, placed in

the same container. If possible, grab samples of material (e.g. concrete) shall be pulverized into smaller pieces and mixed with other grab samples of material before being placed in sample container. If material cannot be easily pulverized (e.g. wood) it shall be broken into small enough pieces to fit into sample container with material from other grab samples. Grab samples shall be collected of the paint on the surface of the building material as well as the underlying substrate material (i.e. wood, concrete, brick) to a minimum depth of 3 inches (or full depth of material if less than 3 inches).

The composite samples shall be representative of the entire waste stream, not just paint, and will be placed in laboratory-supplied jars and transported under chain-of-custody protocol to a certified laboratory for TCLP lead analysis.

6.4 Soil Sampling under Basement Floor Slab

Five samples of soil shall be collected at locations outlined in Section 5.4.

To access soil beneath the basement floor slab, Contractor shall core a hole through the concrete slab. Prior to coring, contractor shall use hand tools to remove all surface coatings and paint from the concrete surface. During coating/paint removal, contractor shall use adequate engineering controls to control and collect paint/coating debris generated by the operation to prevent it from becoming airborne and ensure that it is properly containerized for disposal. The final paint/coating removal method shall include wire brushing of the surface, followed by a wipe with a water-wetted rag.

At each sample location, a 4-inch hole shall be cored through the floor slab. Atlas (formerly ATC Group Services) previously identified the slab thickness as approximately 4-5 inches thick. Assuming that wet coring will be used, Contractor shall use as little water as possible during the operation. A shop vac shall be used during coring to extract water/slurry from the edge of the core hole, so that when the bottom of the slab is reached, minimal water/slurry will be discharged into the underlying soil. Once the full depth of the slab is cored, Contractor shall immediately turn off water supplied to the core drill, vacuum any water/slurry around the hole, and remove the concrete core to access the underlying soil. All water and slurry generated shall be containerized in a sealed, labeled container, and Contractor shall arrange for off-site disposal of the waste according to relevant state and federal regulations.

Contractor shall collect a representative grab sample of soil from the center bottom of each cored hole using hand tools, with soil collected from between the surface of the soil and two inches below surface of soil. Any stones or gravel in the soil shall be removed and not included in the sample. Contractor shall not collect any soil that has been visibly contaminated by water or slurry from the coring procedure.

All samples shall be placed in laboratory-supplied jars and transported under chain-of-custody protocol to a certified laboratory for PCB analysis in accordance with the EPA 3540C soxhlet extraction method and SW-846 8082 Aroclor analytical method.

Sampling nomenclature shall be developed so that each sample ID uniquely identifies the sample, including but not limited to the room number and term "soil". Field notes collected during sampling should also indicate date and time of collection, thickness of floor slab at that location, and include floor plan notations showing the exact location of the sample. The sample information/ID for each sample shall be written on the floor next to collected sample and the sample location documented with photograph(s).

Patching of cored holes is not required. Instead, please place concrete core back in the hole.

Sampling tools, including coring equipment, shall be decontaminated between samples by first removing gross contamination, and then performing a final wipe using a clean hexane-wetted paper towel. Alternatively, a disposable tool/blade can be used for each sample.

7 Deliverables

Contractor shall provide laboratory analytical reports, Excel™ and pdf versions of tables prepared for both PCB and asbestos data, and floor plan sketches showing sample locations, after receipt of laboratory data reports for the Phase 1 work.

The format of the PCB source material table (caulking, paint/coatings, mastics, etc.) should match the PCB source material table in Appendix B and should include the following information, at a minimum, with each category of information in a separate column:

- Sample ID
- Sample date
- Location (interior/exterior)
- Location (Floor)
- Location (Room number and surface [i.e. east wall, ceiling, floor])
- Material type (e.g. caulking)
- Material description (color, texture, etc.)
- Underlying substrate(s)
- PCB Concentration (each Aroclor in separate column), concentration in ppm. Non-detects should be represented as “ND” followed by reporting limit in parentheses, e.g. “ND (0.73)”
- Total PCB Concentration, as reported by laboratory, same formatting as individual Aroclors.

Soil sample data shall be tabulated in a separate table from the PCB source material table (i.e. caulking and paint/coatings). The soil table shall be similar in format to the PCB source material table as described above, with location (interior/exterior and floor), material type, material description, and underlying substrate columns not necessary.

If brick or other masonry samples are collected for PCB analysis during Phase 2 sampling, the data shall be tabulated in a separate table from the PCB source material table. The masonry PCB table shall be similar in format to the PCB source material table as described above, with material description and underlying substrate columns not necessary.

The asbestos data should be separated into two separate tables, one for non-ACM materials and another for ACM materials, with an ACM defined as a material containing $\geq 1\%$ asbestos. The tables should include the following information, at a minimum, with each category of information in a separate column:

- Sample ID
- Sample date
- Sample location (interior/exterior)
- Sample location (Floor)
- Sample location (Room number)
- Material type (e.g. caulking) / Material number (to match material numbers in Table 3)
- Material description (color, texture, etc.)
- Asbestos concentration or “ND”

Following receipt of all data, Contractor shall prepare a Data Summary Technical Memorandum, to include:

- Text summary of field investigation including sampling and analytical procedures;
- Laboratory data reports;
- Summary tables of data for each media type (also provide electronic Excel™ versions of tables) as noted above. For ACM and non-ACM tables, Contractor shall add historical data as provided in the tables in the 2021 KGSNE report; and
- Floor Plans marked up to show sample locations for PCB and asbestos samples. Atlas will provide Floor Plans in CADD format that shall be used as the base drawings;
- Contractor shall provide electronic copies of photographs of each sample location for PCB and asbestos samples, in jpg format. The file name of each photograph shall reflect the sample ID of the sample shown in the photograph, and/or the sample ID shall be visible in the photograph (e.g., written on the wall or a piece of paper placed next to the sample location).

8 Requested Schedule

The requested sampling work should be completed as soon as possible. However, standard 1-2 week turn-around time from the laboratory is acceptable. Atlas requests that the requested deliverables be provided within 2-4 weeks of receipt of laboratory data, with at a minimum tables of PCB source material (caulking and paints/coatings) and asbestos data and field sample location sketches to be provided within 2 weeks of receipt of data.

Atlas and the Town of St. Johnsbury will provide instructions for conducting Phase 2 lead paint waste characterization TCLP testing and possible brick PCB sampling within two weeks of receipt of Phase 1 PCB source material and asbestos data. Contractor should plan on completing this work within two weeks of receipt of the Phase 2 sampling instructions, with a standard turn-around time requested from the laboratory for Phase 2 samples.

The final Data Summary Technical Memorandum is requested within 2 weeks of receipt of final Phase 2 laboratory analytical data.

Tables

Table 2 - Number and Locations of Samples to be collected from Suspect PCB Paints/Coatings

Exterior / Interior	Floor	Room	Surface (Directional Descriptor used for Walls)	Approx. SF of Surface	Substrate	No. Samples	Ancillary Surfaces (if any)	Approx. SF of Surface	No. Samples	Notes / Comments:		
Interior	2nd	3	East	270	Plaster/Lath	1	Wood Trim	15	1			
			South	270	Plaster/Lath	1	Wood Trim	15				
			West	270	Plaster/Lath	1	Wood Trim	15				
			North	270	Plaster/Lath		Wood Trim	15				
			Ceiling	900	Plaster/Lath	1	(Door)	20	1			
			Floor	900	Underlayment	--	NA		--	Unpainted/coated		
		4	East	270	Plaster/Lath	1	Wood Trim	15	1			
			South	180	Plaster/Lath	1	Wood Trim	10				
			West	270	Plaster/Lath	1	Wood Trim	15				
			North	180	Plaster/Lath		Wood Trim	10				
			Ceiling	600	Bare Lath	--	(Door)	20	1	Unpainted/coated		
			Floor	600	Underlayment	--	NA		--	Unpainted/coated		
		5	East	180	Plaster/Lath	1	Wood Trim	10	1			
			South	90	Plaster/Lath	1	Wood Trim	5				
			West	180	Plaster/Lath	1	Wood Trim	10				
			North	90	Plaster/Lath		Wood Trim	5				
			Ceiling	200	Drop Tiles	1	(Door)	20	1			
			Floor	200	Hardwood	1	NA		--			
		6	East	72	Plaster/Lath	1	Wood Trim	4	1	Small room		
			South	72	Plaster/Lath	1	Wood Trim	4				
			West	72	Plaster/Lath		Wood Trim	4				
			North	72	Plaster/Lath		Wood Trim	4				
			Ceiling	64	Drywall	1	(Door)	20	1			
			Floor	64	Hardwood	1	NA		--			
		7	East	54	Plaster/Lath	1	Wood Trim	3	1	Small room		
			South	54	Plaster/Lath	1	Wood Trim	3				
			West	54	Plaster/Lath		Wood Trim	3				
			North	54	Plaster/Lath		Wood Trim	3				
			Ceiling	36	Drywall	1	(Door)	20	1			
			Floor	36	Hardwood	1	NA		--			
		8	East	180	Plaster/Lath	1	Wood Trim	10	1			
			South	108	Plaster/Lath	1	Wood Trim	6				
			West	180	Plaster/Lath	1	Wood Trim	10				
			North	108	Plaster/Lath		Wood Trim	6				
			Ceiling	240	Plaster/Lath	1	(Door)	20	1			
			Floor	240	Hardwood	1	NA		--			
		9	East	180	Plaster/Lath	1	Wood Trim	10	1			
			South	90	Plaster/Lath	1	Wood Trim	5				
			West	180	Plaster/Lath	1	Wood Trim	10				
			North	90	Plaster/Lath		Wood Trim	5				
			Ceiling	200	Plaster/Lath	1	(Door)	20	1			
			Floor	200	Hardwood	1	NA		--			
		10	East	180	Plaster/Lath	1	Wood Trim	10	1			
			South	90	Plaster/Lath	1	Wood Trim	5				
			West	180	Plaster/Lath	1	Wood Trim	10				
			North	90	Plaster/Lath		Wood Trim	5				
			Ceiling	200	Bare Lath	--	(Door)	20	1	Unpainted/coated		
			Floor	200	Underlayment	--	NA		--	Unpainted/coated		
		TOTAL 2nd Floor						33			16	
		Total Wall						22				
		Total Floor Coating						5				
		Total Ceiling						6				
		Total Wall Trim									8	
		Total Door									8	

Table 2 - Number and Locations of Samples to be collected from Suspect PCB Paints/Coatings

<u>Exterior / Interior</u>	<u>Floor</u>	<u>Room</u>	<u>Surface (Directional Descriptor used for Walls)</u>	<u>Approx. SF of Surface</u>	<u>Substrate</u>	<u>No. Samples</u>	<u>Ancillary Surfaces (if any)</u>	<u>Approx. SF of Surface</u>	<u>No. Samples</u>	<u>Notes / Comments:</u>
Interior	1st	Stairwell 1-2	East	NA	NA	--	NA		--	
			South	225	Plaster/Lath	1	Wood rails	20 LF	1	
			West	54	Plaster/Lath		NA		--	
			North	225	Plaster/Lath	1	Wood rails	20 LF		
			Ceiling	150	Plaster/Lath	1	NA		--	
			Floor	150	Wood Steps	1	NA		--	
		11	East	135	Drywall over Plaster/Lath	1	Wood Trim	7.5	1	
			East	135		1	NA		--	
			South	270	Drywall over Plaster/Lath	1	Wood Trim	15		
			South	270		1	NA		--	
			West	135	Drywall over Plaster/Lath	1	Wood Trim	7.5		
			West	135		1	NA		--	
			North	270	Drywall over Plaster/Lath		Wood Trim	15		
			North	270			NA		--	
			Ceiling	450	Drywall over Plaster/Lath	1	(Door)	20	1	
			Ceiling	450		1	NA		--	
			Floor	450	Hardwood	1	NA		--	
		12	East	270	Drywall over Plaster/Lath	1	Wood Trim	15	1	
			East	270		1	NA		--	
			South	180	Drywall over Plaster/Lath	1	Wood Trim	10		
			South	180		1	NA		--	
			West	270	Drywall over Plywood (unpainted)		Wood Trim	15		
			West	270		--	NA		--	Unpainted/coated
			North	180	Drywall over Plaster/Lath	1	Wood Trim	10		
			North	180		1	NA		--	
			Ceiling	600	Drywall over Particle Board over Plaster/Lath	1	NA		--	
			Ceiling	600		1	NA		--	
			Ceiling	600		1	NA		--	
			Floor	600	Hardwood	1	NA		--	
		13	East	54	Plaster/Lath	1	Wood Trim	3	1	Small room
			South	90	Plaster/Lath	1	Wood Trim	5		
			West	54	Plaster/Lath		Wood Trim	3		
			North	90	Plaster/Lath		Wood Trim	5		
			Ceiling	60	Wood Panel over Plaster/Lath	1	(Door)	20	1	
			Ceiling	60		1	NA		--	
			Floor	60	Hardwood	1	NA		--	
		14	East	216	Drywall over Plaster/Lath	1	Wood Trim	12	1	
			East	216		1	NA		--	
			South	108	Drywall over Plaster/Lath	1	Wood Trim	6		
			South	108		1	NA		--	
			West	216	Drywall over Plaster/Lath	1	Wood Trim	12		
			West	216		1	NA		--	
			North	108	Drywall over Plaster/Lath		Wood Trim	6		
			North	108			NA		--	
			Ceiling	288	Drywall drop ceiling Wood Panel over Plaster/Lath	1	(Door)	20	1	
			Ceiling	288		1	NA		--	
			Ceiling	288		1	NA		--	
			Floor	288	Hardwood	1	NA		--	
		15	East	54	Plaster/Lath	1	Wood Trim	3	1	Small room
			South	54	Plaster/Lath	1	Wood Trim	3		
			West	54	Plaster/Lath		Wood Trim	3		
			North	54	Plaster/Lath		Wood Trim	3		
			Ceiling	36	Plywood panel over Plaster/Lath	1	(Door)	20	1	
			Ceiling	36		1	NA		--	
			Floor	36	Vinyl/Lin over Hardwood		NA		--	

Table 2 - Number and Locations of Samples to be collected from Suspect PCB Paints/Coatings

Exterior / Interior	Floor	Room	Surface (Directional Descriptor used for Walls)	Approx. SF of Surface	Substrate	No. Samples	Ancillary Surfaces (if any)	Approx. SF of Surface	No. Samples	Notes / Comments:
		16	East	225	Wood panel over	1	Wood Trim	12.5	1	
			East	225	Plaster/Lath	1	NA		--	
			South	270	Wood panel over	1	Wood Trim	15		
			South	270	Plaster/Lath	1	NA		--	
			West	225	None	--	None			
			North	270	Wood panel over	1	Wood Trim	15		
			North	270	Plaster/Lath	1	None			
			Ceiling	750	Plaster/Lath	1	(Door)	20	1	
			Floor	750	Underlayment	--	NA		--	Unpainted/coated
		Gym	East	1,386	Wood panelling over	3	None		--	
			East	1,386	Particle board over	3	NA		--	
			East	1,386	Plaster/Lath	3	NA		--	
			South	957	Brick	1	None		--	Already have 2 samples
			West	1,386	Brick	3	None		--	Take high & low samples on this wall (1 high, 2 low)
			North	957	Brick	3	(Door)	20	1	
			Ceiling	5,481	Particle board/plywood	6	Metal Girders	1,500 LF	4	
			Floor	4,933	Hardwood/polyurethane	5	NA		--	Area with coating but not painted
			Floor	164	Hardwood/Dk green	1	NA		--	Dark green paint area
			Floor	164	Hardwood/Lt green	1	NA		--	Light green paint area
			Floor	164	Hardwood/White	1	NA		--	White paint area
		TOTAL 1st Floor				79			17	
			Total Wall		46					
			Total Floor Coating		12					
			Total Ceiling		20					
			Total Steps/Rails		1				1	
			Total Wall Trim						6	
			Total Doors						6	
			Total Girders						4	
Interior	Basement	Stairwell 0-1	East		NA	--	NA		--	
			South	225	Plaster/Lath	1	Wood rails	20 LF	1	
			West	54	Plaster/Lath	1	None		--	
			North	225	Plaster/Lath	1	Wood rails	20 LF		
			Ceiling	150	Drywall	1	(Door)	20	1	White painted
			Floor	150	Wood Steps	1	NA		--	
		18	East	180	Brick	1	None		--	
			South	135	Brick	1	None		--	
			West	180	Brick		None		--	
			North	135	Concrete/Brick	2	None		--	One sample on each substrate
			Ceiling	300	3 layers Drywall over	--	NA		--	Unpainted
			Ceiling	300	Pressed tin over	1	NA		--	Painted?
			Ceiling	300	Lath	--	NA		--	Unpainted
			Floor	300	Gray Painted Concrete		NA		--	Under 12x12 VFT; previously sampled
		20	East	270	Brick	1	None		--	
			South	180	Brick		None		--	
			West	270	Brick	1	None		--	
			North	180	Concrete/Brick	2	None		--	One sample on each substrate
			Ceiling	600	None	--	NA		--	
			Floor	600	Unpainted Concrete	--	NA		--	Unpainted/coated
		21	East	270	Concrete/Brick	2	None		--	One sample on each substrate
			South	180	Brick	1	None		--	
			West	270	Brick	1	None		--	
			North	180	Concrete/Brick		None		--	
			Ceiling	600	Drywall over ??	1	(Door)	20	1	White painted
			Floor	600	Beige Painted Concrete	2	NA		--	

Table 2 - Number and Locations of Samples to be collected from Suspect PCB Paints/Coatings

Exterior / Interior	Floor	Room	Surface (Directional Descriptor used for Walls)	Approx. SF of Surface	Substrate	No. Samples	Ancillary Surfaces (if any)	Approx. SF of Surface	No. Samples	Notes / Comments:
		22	East	108	Painted Drywall (5 SF)	1	None		--	
			East		Concrete Foundation	1	NA		--	
			South	225	Painted plywood over	1	None		--	
			South		Brick	1	NA		--	
			West	108	Painted plywood over	1	None		--	
			West		Brick	1	NA		--	
			North	225	Painted plywood over		None		--	
			North		Brick		NA		--	
		22	Ceiling	300	2x4 wood	1	(Door)	20	1	White painted
			Floor	300	Gray Painted Concrete		NA		--	Previously sampled
		23	East	225	Concrete/Brick	2	Wood trim	12.5	1	One sample on each substrate
			South	144	Concrete/Brick		Wood trim	8		
			West	225	Brick	1	Wood trim	12.5		
			North	144	Brick	1	Wood trim	8		
			Ceiling	400	Pressed tin over lath	1	(Door)	20	1	White painted
			Floor	400	Gray Painted Concrete		NA		--	Previously sampled
		24	East	144	Brick	1	None		--	
			South	135	Concrete/Brick	2	None		--	One sample on each substrate
			West	144	Brick	1	None		--	
			North	135	Unpainted plywood	--	None		--	Unpainted/coated
			Ceiling	240	Bare Lath		(Door)	20	1	
			Floor	240	Gray Painted Concrete		NA		--	Previously sampled
		24A	East	54	None	--	None		--	Small Room
			South	135	Painted plywood	1	None		--	
			West	54	Brick	1	None		--	
			North	135	Brick	1	None		--	
			Ceiling	90	Drywall over ??	1	NA		--	White painted
			Floor	90	Gray Painted Concrete		NA		--	Previously sampled
		25	East	108	Brick	1	None		--	Small room
			South	45	Brick	1	None		--	
			West	108	Brick		None		--	
			North	45	Brick		None		--	
			Ceiling	60	Drywall over	1	(Door)	20	1	
			Ceiling	60	Plaster/Lath	1	NA		--	
		25A	Floor	60	Gray Painted Concrete		NA		--	Previously sampled
			East	90	Brick	1	None		--	Small room
			South	135	Brick	1	None		--	
			West	90	Brick		None		--	
			North	135	Brick		None		--	
			Ceiling	150	Drywall over	1	NA		--	
		26	Ceiling	150	Plaster/Lath	1	NA		--	
			Floor	150	Gray Painted Concrete		NA		--	Previously sampled
			East	108	Brick	1	None		--	
			South	540	Concrete/Brick	2	None		--	One sample on each substrate
			West	108	CMU (newer), Drywall	--	None		--	Newer walls (no PCBs)
			North	540	CMU	1	None		--	
		27	Ceiling	720	Drywall over lath	1	NA		--	White painted
			Floor	720	Gray Painted Concrete		NA		--	Previously sampled
			East	180	Unpainted CMU	--	None		--	Unpainted/coated
			South	585	CMU	1	None		--	
			West	180	None		None		--	
			North	90	CMU (west end 10')	1	None		--	
			North	495	Brick (remainder)	1	NA		--	
		27	Ceiling	1,300	None	--	NA		--	Bare wood panelling
			Floor	1,300	Gray Painted Concrete		NA		--	Previously sampled

Table 2 - Number and Locations of Samples to be collected from Suspect PCB Paints/Coatings

Exterior / Interior	Floor	Room	Surface (Directional Descriptor used for Walls)	Approx. SF of Surface	Substrate	No. Samples	Ancillary Surfaces (if any)	Approx. SF of Surface	No. Samples	Notes / Comments:
		27A	East	180	Brick	1	None		--	Partially painted
			South	45	None	--	None		--	
			West	180	CMU	1	None		--	
			North	45	Brick	--	None		--	Unpainted
			Ceiling	100	None	--	NA		--	
			Floor	100	Gray Painted Concrete		NA		--	Previously sampled
		28	East	495	Bare wood/ none	--	None		--	Unpainted/coated
			South	153	Concrete/Brick	2	None		--	One sample on each substrate
			West	495	Concrete/Brick	2	None		--	One sample on each substrate
			North	153	None	--	None		--	
			Ceiling	935	None	--	(Door)	20	1	
			Floor	935	Unpainted Concrete	--	NA		--	Unpainted/coated
		29	East	90	Bare wood	--	None		--	Unpainted/coated
			South	153	None	--	None		--	
			West	90	Concrete/Brick	2	None		--	One sample on each substrate
			North	153	Concrete/Brick	2	None		--	One sample on each substrate
			Ceiling	170	None	--	NA		--	
			Floor	170	Unpainted Concrete	--	NA		--	Unpainted/coated
		30	East	135	Brick	1	None		--	
			South	90	None	--	None		--	
			West	135	None	--	None		--	
			North	90	Concrete/Brick	2	None		--	One sample on each substrate
			Ceiling	150	Drywall over lath	1	NA		--	White painted
			Floor	150	Gray Painted Concrete		NA		--	Previously sampled
		31	East	135	None	--	None		--	Originally same room as 32, 33
			South	135	None	--	None		--	
			West	135	Brick	1	None		--	
			North	135	Concrete/Brick	2	None		--	One sample on each substrate
			Ceiling	225	Unpainted drywall	--	NA		--	Unpainted/coated
			Floor	225	Gray Painted Concrete		NA		--	Previously sampled
		32	East	135	None	--	None		--	Originally same room as 31, 33
			South	135	None	--	None		--	
			West	135	None	--	None		--	
			North	135	Concrete/Brick		None		--	Sampled in Rooms 31, 33
			Ceiling	225	Unpainted drywall	--	NA		--	Unpainted/coated
			Floor	225	Gray Painted Concrete		NA		--	Previously sampled
		33	East	135	Brick	1	None		--	Originally same room as 31, 32
			South	135	None	--	None		--	
			West	135	None	--	None		--	
			North	135	Concrete/Brick	2	None		--	One sample on each substrate
			Ceiling	225	Unpainted drywall	--	NA		--	Unpainted/coated
			Floor	225	Gray Painted Concrete		NA		--	Previously sampled
		34	East	135	Brick	1	None		--	
			South	90	CMU	1	None		--	
			West	135	None	--	None		--	
			North	90	None	--	None		--	
			Ceiling	150	Drywall over lath	1	NA		--	White painted
			Floor	150	Gray Painted Concrete		NA		--	Previously sampled
		35	East	135	None	--	None		--	Originally same room as 36, 37
			South	45	Brick	1	None		--	
			West	135	Brick	1	None		--	
			North	45	None	--	None		--	
			Ceiling	75	Pressed tin over lath	1	NA		--	White painted
			Floor	75	Gray Painted Concrete		NA		--	Previously sampled

Table 2 - Number and Locations of Samples to be collected from Suspect PCB Paints/Coatings

<u>Exterior / Interior</u>	<u>Floor</u>	<u>Room</u>	<u>Surface (Directional Descriptor used for Walls)</u>	<u>Approx. SF of Surface</u>	<u>Substrate</u>	<u>No. Samples</u>	<u>Ancillary Surfaces (if any)</u>	<u>Approx. SF of Surface</u>	<u>No. Samples</u>	<u>Notes / Comments:</u>		
		36	East	135	None	--	None		--	Originally same room as 35, 37		
			South	90	Brick		None		--	Sampled in Rooms 35, 37		
			West	135	None	--	None		--			
			North	90	None	--	None		--			
			Ceiling	150	Pressed tin over lath	1	NA		--	White painted		
			Floor	150	Gray Painted Concrete		NA		--	Previously sampled		
		37	East	135	Brick	1	None		--	Originally same room as 35, 36		
			South	270	Brick	1	None		--			
			West	135	None	--	None		--			
			North	270	None	--	None		--			
			Ceiling	450	Pressed tin over lath	1	NA		--	White painted		
			Floor	450	Gray Painted Concrete		NA		--	Previously sampled		
		TOTAL Basement						87			9	
		Total Wall						68			1	
		Total Floor Coating						2				
		Total Ceiling						16				
		Total Steps/Rails						1				
		Total Wall Trim							1			
		Total Doors							7			
Exterior	NA	Front Entrance - Surround		50	Wood	3	None		--	White painted		
	NA	Front Entrance - Door		64	Wood	3	None		--	Dark Green painted		
	NA	Front Entrance		100	Concrete	3	None		--	White painted		
	NA	North basement stairwell		200	Concrete	3	None		--	Multi-color painted		
	NA	Front Steps Handrails		40 LF	Metal	3	None		--	Black painted		
	NA	Window Frames		80	Wood	3	None		--	White painted		
	NA	Window Sashes		80	Wood	3	None		--	Dark Green painted		
	NA	Ceiling of North central roof over steps		150	Wood	3	None		--	White painted		
	NA	Roof Edge Trim/Soffits		400	Wood	3	None		--	White/gray painted		
	NA	Southwest Loading Ramp		600	Concrete	3	None		--	Gray painted		
	NA	Southwest Loading Ramp Roof		300	Wood Trim/Soffit/Door & Sheet Metal walls	3	None		--	White painted		
TOTAL Exterior						33			0			
TOTAL (Main Surfaces/Ancillary Breakdown)						232			42			
TOTAL (PAINT/COATINGS)						274						
Duplicate Samples						14						
GRAND TOTAL (PAINT/COATINGS)						288						

Notes:

SF = Square feet

LF = Linear feet

Table 3 – Samples to be collected from Suspect Asbestos Materials

Material & Description (Material ID)	Appendix Photograph Reference No.	Material Location(s)	Quantity	No. of Recommended Samples	Recommended Sample Locations
Caulking Materials					
Black caulk (#1)	1	Exterior; Between back edge of soffit and brick wall below; north and south sides of building	175 LF	2	Roofline - north side
White caulk (#2)	2	Exterior; Roofline intersection (sloping portion) between east and west portions of building, at top of metal flashing and in joint between roof and wall	20 LF	2	Roofline - north side
Flashing caulk (#3)	3	Exterior; Small roof over southwest loading ramp roofline intersection with brick wall, at top of metal flashing	20 LF	2	SW Corner Ramp Roof
Caulk (if present) (#4)	4	Over central stair to basement; roofline intersection with brick wall	20 LF	2	Small roof over north central stair to basement
Light gray horizontal caulk (#5)	5	Roof - chimney	10 LF	2	Roof - chimney
Yellow caulking around interior door trim (no photo) (#6)	NA	Room 17 (gym) between exit door frame and interior brick, north side of gym	20 LF	2	Room 17 (gym)
Roofing Materials					
Asphalt shingle (#7)	6	Eastern end of western portion of building - upper wall on roof level adjacent to flat roof - under slate wall shingles	200 SF	2	At material location
Roof paper (brown & black [tar]) (#8 and #9)	6	Eastern end of western portion of building - upper wall on roof level adjacent to flat roof - under slate wall shingles	200 SF	2	At material location
Material(s) (including tar paper) that may be present under gambrel slate (#10)	7	Gambrel roof - under slate	~6,000 SF	2	Gambrel roof - top. Conduct exploratory work under slate.
Rubber roofing adhesive (#11)	8	Throughout flat roof, eastern portion of building, seams, corners, various locations	100 SF	3	Flat roof, eastern portion of building
Rubber roofing patch adhesive - if present (no photo) (#12)	NA	Flat roof, eastern portion of building, patches (if present)	20 SF	3	Flat roof, eastern portion of building
Asphalt roof repair sheeting (#13)	24	North side of gambrel roof	~2,000 SF	2	Gambrel roof - north side
Interior Wall/Ceiling Materials					
Celotex board (#14)	9	Rooms 6 (loose panels), 10 (walls of closet)	100 SF	2	Room 6, 10
Thin wall panels (#15)	10	Room 10, 16	~700 SF	2	Room 10, 16
Ceiling panels, if not wood/plywood (no photo) (#16)	NA	Room 17 (gym)	~6,000 SF	2	Room 17
Insulation, if any, behind ceiling panels (no photo) (#17)	NA	Room 17 (gym)	~6,000 SF	2	Room 17
Wood paneling - backing paper (#18)	11	Room 5	480 SF	2	Room 5
Black paper (L side of middle window below sill) (#19)	12	Room 5, behind wood paneling? (observed in gap between window trim and paneling)	Up to 480 SF	2	Room 5
Drywall (#20)	13, 14	Walls, ceilings, in-fill panels, around ductwork. Throughout building. Sometimes multiple layers. Includes rooms: 3, 6, 7, 12, 13, 14, 17, 18, 20, 21, 25, 26, 23/24 hallway, 27/bathroom hallway, 28, 30-37 hallway; 30, 31, 32, 33, 34, 35, 36, 37, basement stairs	~6,400 SF	7 rooms x 2 samples each = 14 samples	Rooms 3, 7, 12, 14, 18, 21, 34 (2 samples in each room)
Joint compound (#21)	13, 14	Rooms 6, 7, 12, 13, 14, 26, basement stair landing (where drywall is painted)	~900 SF	3	Room 6, 7, 14
Joint compound (#22)	15	Room 3 (patch)	5 SF	3	Room 3 (all samples)

Table 3 – Samples to be collected from Suspect Asbestos Materials

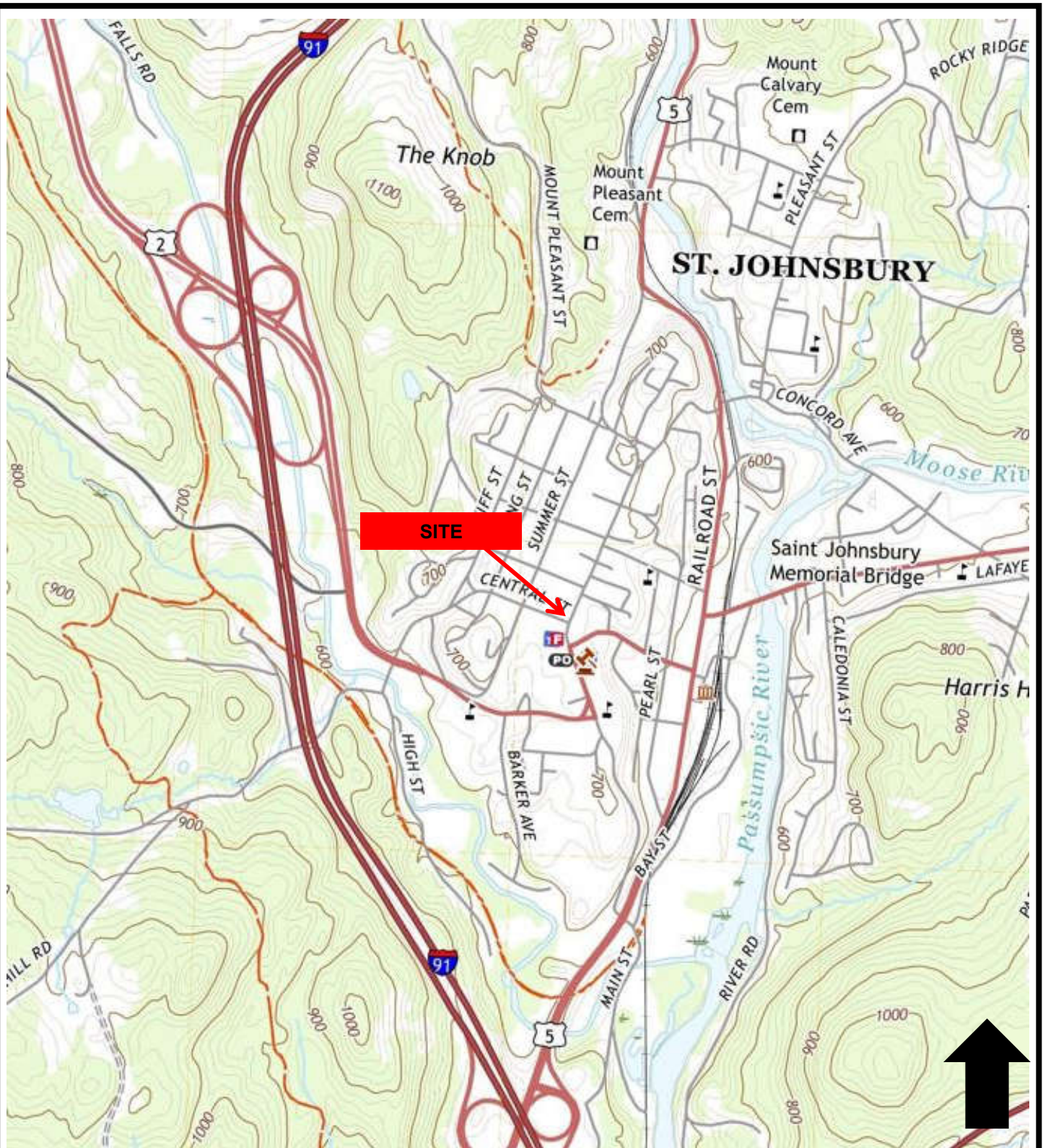
Material & Description (Material ID)	Appendix Photograph Reference No.	Material Location(s)	Quantity	No. of Recommended Samples	Recommended Sample Locations
<i>Interior Miscellaneous Materials</i>					
Sprinkler fitting thread sealant (#23)	19	Room 20, 21, 26 (closet)	<1 SF, several heads	2	Room 20, 21
<i>Interior Flooring Materials</i>					
Beige mastic (#24)	16	Room 13, 14, on wood floor	284 SF	2	Room 13, 14
White sub-floor plaster-like filler (#25)	16	Room 14, under wood floor	Max 230 SF	3	Room 14
Carpet mastic (#26)	17	Room 12, remnant fibers on wood floor	Max 360 SF	2	Room 12
Yellow mastic (#27)	18	Room 22, 27, 30-37, on concrete	~3,900 SF	2	Room 22, 27
Black mastic (#28)	20	Room 18, on underside of VFT	340 SF	2	Room 18
Leveling compound (#29)	21	Room 27, 34	80 SF	3	Room 27, 34
Ceramic Tile thinset (#30)	22	Room 23, floor	100 SF	2	Room 23
Ceramic Tile grout (#31)	22	Room 23, floor	100 SF	2	Room 23
Ceramic Tile (#32)	22	Room 23, floor	100 SF	2	Room 23
Materials, if any, beneath Ceramic Tile (no photo) (# TBD)	22	Room 23, floor	100 SF	2	Room 23
Mastic assoc. with old "Battleship" linoleum, if any (Material #33)	23	Room 15	75 SF	2	Room 15
<i>Exterior Miscellaneous Materials</i>					
Foundation Waterproofing (no photo) (# TBD)	NA	Exterior of foundation	Unknown	3	Exterior of foundation
Materials behind brick façade, if any (paper, mastic, insulation) (no photo) (# TBD)	NA	Behind brick façade	Unknown	3	3 samples of each identified material; perform exploratory removal of brick (*see text for more detail on sampling*)

Notes:

SF = Square Feet; LF = Linear Feet

TBD = To be determined by contractor

Figures



SOURCE: USGS Topographic Map, *Saint Johnsbury, Vermont* Quadrangle, 7.5 Minute Series, dated 2021.



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PROJECT NO.: 280BS02530

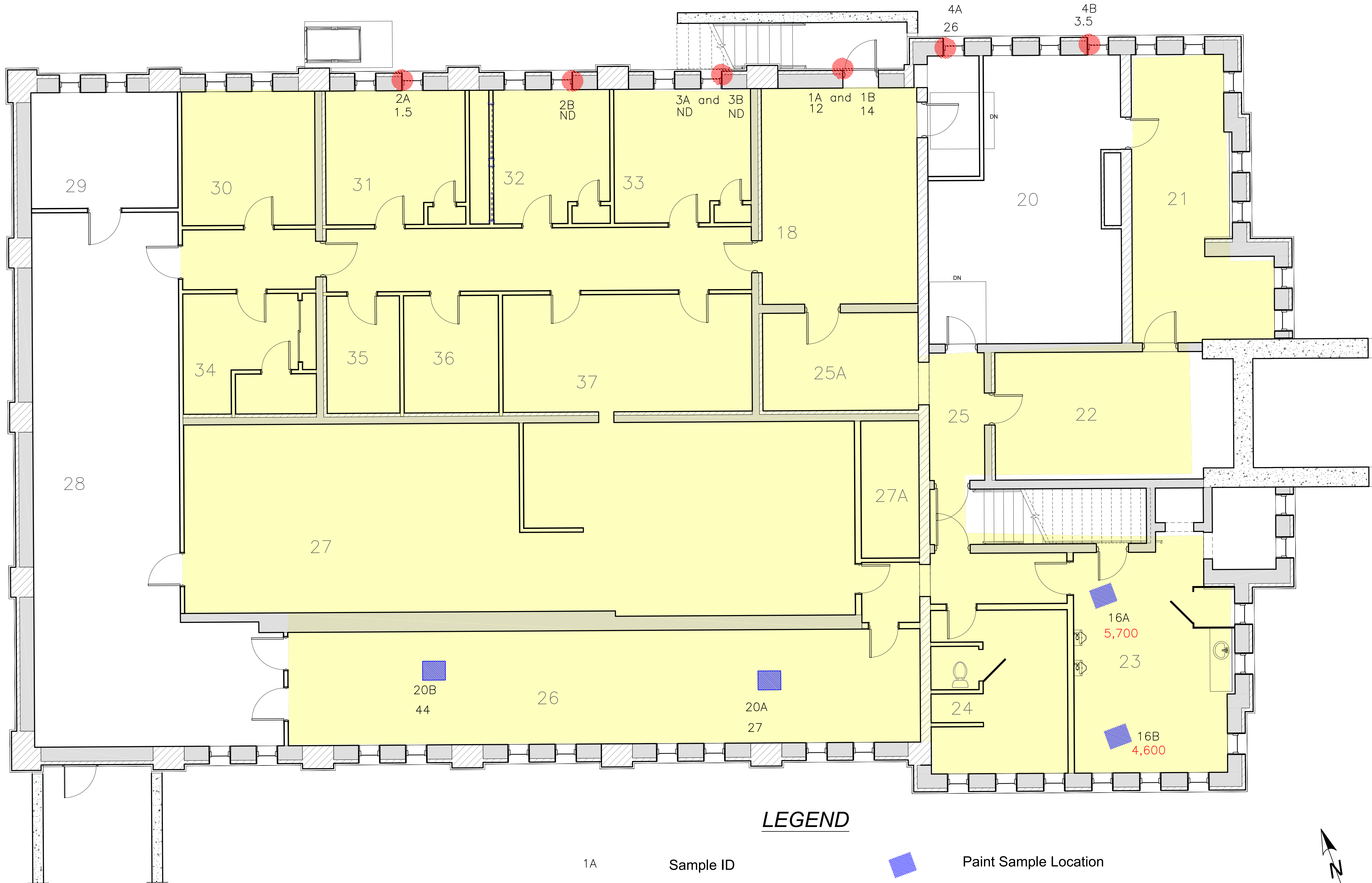
FIGURE 1	SCALE:1:24000	REVIEWED BY: DPW
DRAWN BY: CMR	DATE: 1/2023	FILE: SITE VICINITY

FIGURE 1 SITE VICINITY MAP

St. Johnsbury Armory
1249 Main Street
Saint Johnsbury, Vermont 05819

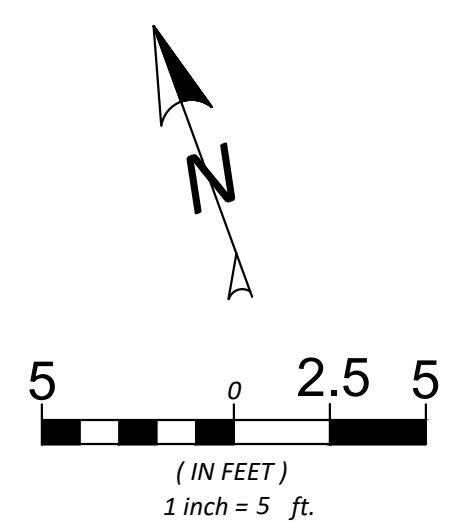
Appendix A

Floor Plans (Basement, First Floor, Second Floor)

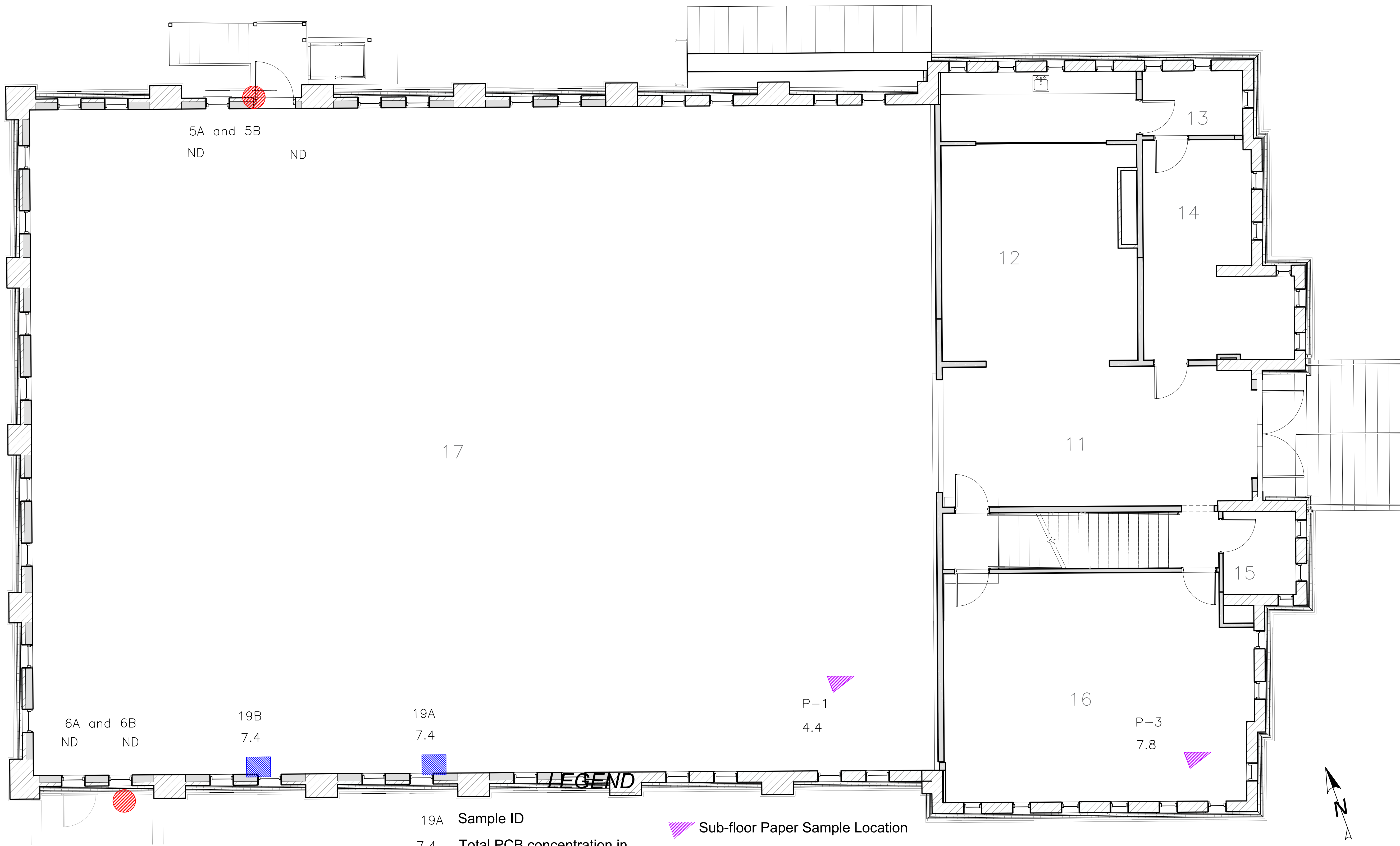


LEGEND

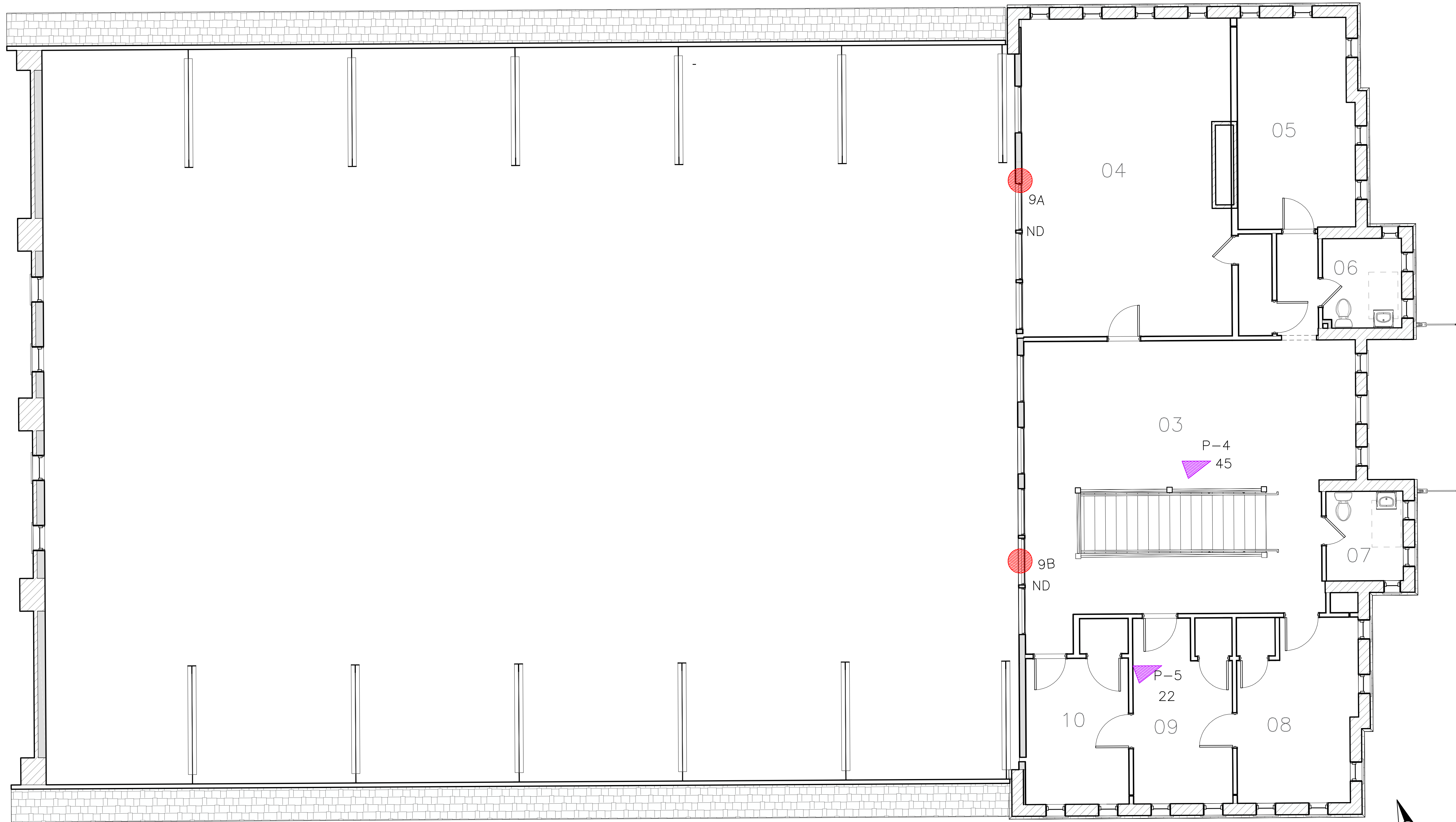
- | | | | |
|-----|--|--|--------------------------------|
| 1A | Sample ID | | Paint Sample Location |
| 1.5 | Total PCB concentration in parts per million (ppm) | | Sealant Sample Location |
| ND | Non-detect | | Area of PCB Bulk Product Paint |
| 00 | Room ID | | |



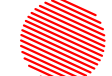
Project Number: 280BS2530		Dm. By: EL
		Ckd. By: DW
ATLAS 51 Knight Lane Williston, Vermont 05495		App'd By: DW
Floor Plan with PCB Data St. Johnsbury Armory - Overall Basement 1249 MAIN STREET ST JOHNSBURY, VERMONT		
Date: 1/6/23		
Scale: AS SHOWN		
Figure: 1		

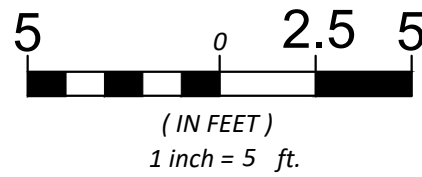


Project Number: 280BS2530		Drm. By: EL
		Ckd. By: DW
ATLAS 51 Knight Lane Williston, Vermont 05495		App'd By: DW
Floor Plan with PCB Data St. Johnsbury Armory - Level 1 1249 MAIN STREET ST JOHNSBURY, VERMONT		
Date: 1/6/23		
Scale: AS SHOWN		
Figure: 2		



LEGEND

- | | | | |
|-----|--|---|---------------------------------|
| P-4 | Sample ID |  | Sub-floor Paper Sample Location |
| 45 | Total PCB concentration in parts per million (ppm) |  | PCB Sealant Sample Location |
| ND | Non-detect | | |
| ND | Room ID | | |



Project Number: 280BS2530		Dm. By: EL
ATLAS 51 Knight Lane Williston, Vermont 05495		Ckd. By: DW
		App'd By: DW
Floor Plan with PCB Data St. Johnsbury Armory - Level 2 1249 MAIN STREET ST JOHNSBURY, VERMONT		
Date: 1/6/23		
Scale: AS SHOWN		
Figure: 3		

Appendix B

Tables of Historical PCB and Asbestos Data

Table 1
Summary of Positive Asbestos Analytical Results
Former St. Johnsbury Armory
St. Johnsbury, VT

Sample ID	Sample Location	Sample Description	Analytical Result
Historically Sampled	Throughout	Plaster walls and ceilings	2% Chrysotile
24A-24C	Room 27	6" Aircell pipe insulation	40% Chrysotile
42A-42C	Room 27	Mudded joint packing	33% Chrysotile
N/A	Boiler room	Boiler internal materials	Assumed Positive

Notes:

1. Positive ACM samples were identified in ATC Environmental Survey Report dated March 28, 2013.

Table 2
Summary of Negative Asbestos Analytical Results
Former St. Johnsbury Armory
St. Johnsbury, VT

Sample ID	Sample Location	Sample Description	Result
SJ-ACM-1	Gym Floor - 1st Level - S. Side	Black Flooring Felt	ND
SJ-ACM-2	Gym Floor - 1st Level - NE Corner	Black Flooring Felt	ND
SJ-ACM-3	1st Floor Foyer - S. Wall	Beige Wall Glue	ND
SJ-ACM-4	1st Floor Foyer - S. Wall	Beige Wall Glue	ND
SJ-ACM-5	Attic by Roof Hatch - W. Side of Stairs	Black Knob & Tube Wiring	ND
SJ-ACM-6	Attic by Roof Hatch - Stairwell	Black Knob & Tube Wiring	ND
SJ-ACM-7	2nd Level - SW Room	Black Electrical Wiring	ND
SJ-ACM-8	2nd Level - SW Room	Black Electrical Wiring	ND
SJ-ACM-9	2nd Floor - Large Center Room/Foyer N. Side	Brown Flooring Paper	ND
SJ-ACM-10	1st Floor SE Room - S. Side	Brown Flooring Paper	ND
SJ-ACM-11	2nd Level - NW Room - Ceiling - NW Corner	Black Roofing Tar	ND
SJ-ACM-12	2nd Level - NW Room - Ceiling - W. Side	Black Roofing Tar	ND
SJ-ACM-13	2nd Level - NW Room - E. Fireplace	Fireplace Brick	ND
SJ-ACM-14	2nd Level - NW Room - E. Fireplace	Fireplace Brick	ND
SJ-ACM-15	2nd Level - NW Room - E. Fireplace	Fireplace Mortar	ND
SJ-ACM-16	2nd Level - NW Room - E. Fireplace	Fireplace Mortar	ND
SJ-ACM-17	Basement - W. Addition - NE Room	Orange Carpet Glue Remnant	ND
SJ-ACM-18	Basement - W. Addition - W. End of Hallway	Orange Carpet Glue Remnant	ND
SJ-ACM-19	1st Level - Main Entrance Bathroom - W. Side	Brown Battleship Linoleum	ND
SJ-ACM-20	1st Level - Main Entrance Bathroom - E. Side	Brown Battleship Linoleum	ND
SJ-ACM-21	Basement - Door at Bottom of Stairwell	Fireproof/Retardant Board	ND
SJ-ACM-22	Basement - Door at Bottom of Stairwell	Fireproof/Retardant Board	ND
SJ-ACM-23	Basement - Door at Bottom of Stairwell	Fireproof/Retardant Board	ND
SJ-ACM-24	Basement - Boiler Room	Boiler Cementitious Coating	ND
SJ-ACM-25	Basement - Boiler Room	Boiler Cementitious Coating	ND
SJ-ACM-26	Basement - Boiler Room	Boiler Cementitious Coating	ND
SJ-ACM-27	Boiler Door - Putty Material	Boiler Door Putty	ND
SJ-ACM-28	Boiler Door - Putty Material	Boiler Door Putty	ND
SJ-ACM-29	Boiler Door - Putty Material	Boiler Door Putty	ND
SJ-ACM-30	Boiler - Interior	Firebrick	ND
SJ-ACM-31	Boiler - Interior	Firebrick	ND
SJ-ACM-32	Boiler - Stacked by Boiler	Firebrick	ND
SJ-ACM-33	Boiler - Bottom Ext. Layer	Blue Tinted Insulation	ND
SJ-ACM-34	Boiler - Bottom Ext. Layer	Blue Tinted Insulation	ND
SJ-ACM-35	Boiler - Bottom Layer	Blue Tinted Insulation	ND
SJ-ACM-36	1st Level - Main Foyer - E. Side	Flooring Glue Remnant	ND
SJ-ACM-37	1st Level - Main Foyer - W. Side	Flooring Glue Remnant	ND
SJ-ACM-38	Basement - S. Corridor - N. Wall	Tan Wall Adhesive	ND
SJ-ACM-39	Basement - S. Corridor - NE Corner	Tan Wall Adhesive	ND
SJ-ACM-40	2nd Level - NE Room - N. Side	White 2x4 Ceiling Tile	ND
SJ-ACM-41	2nd Level - NE Room - S. Side	White 2x4 Ceiling Tile	ND
SJ-ACM-42	2nd Level - NW Room - N. Side	Ceiling Panel Remnant	ND
SJ-ACM-43	2nd Level - NW Room - S. Side	Ceiling Panel Remnant	ND
SJ-ACM-44	Boiler Room - Electrical Panel - NW Corner	High Voltage Wire Coating	ND
SJ-ACM-45	Boiler Room - Electrical Panel - NW Corner	High Voltage Wire Coating	ND
01A-01C	Exterior	Gray door caulking	ND
02A-02C	Exterior	White window caulking	ND
03A-03C	Exterior	White window glazing	ND
04A-04C	Exterior	White window caulking	<1% ¹
05A-05C	Exterior	Tar brick caulking	<1% ¹

Table 2
Summary of Negative Asbestos Analytical Results
Former St. Johnsbury Armory
St. Johnsbury, VT

Sample ID	Sample Location	Sample Description	Result
06A-06C	Exterior	Silver flashing	ND
07A-07C	Roof	Built up pebble and tar	ND
08A-08C	Roof	Roofing felt	ND
09A-09C	Exterior	Black caulk at gambrel flashing	ND
12A-12C	First floor	Carpet mastic	ND
16A-16C	Basement	Gray floor paint	ND
19A-19C	Basement	White wall paint	ND
20A-20C	Rooms 25 and 26	Blue floor paint	ND
21A-21C	Room 18	12x12 Beige Floor Tile	ND
22A-22C	Room 18	Mastic on 21A-21C floor tile	ND
28A-28C	Gym	White window sill wall coating	ND
29A-29C	Room 12	Blue & maroon resilient sheet flooring	ND
30A-30C	Room 12	Mastic on 29A-29C sheet flooring	ND
31A-31C	First floor and basement	Black stair tread risers	ND
33A-33C	Room 25	Brown glue dabs	ND
35A-35C	Rooms 18 and 29	Blown-in-insulation	ND
38A-38C	Room 20 - boiler room	Debris on boiler, exhaust, duct & hot water tank	ND
40A-40C	Room 21	Pipe putty	ND
44A	Boiler room	Boiler gasket	ND

Notes:

1. Environmental Survey by ATC dated March 28, 2013 identified "Trace" quantities of asbestos as <1%
2. Samples SJACM-1 through SJACM-45 were collected by Nobis on February 3-4, 2021.
3. Samples 01A-44A were collected by ATC as identified in the Environmental Survey report dated March 28, 2013.

Table 3
Suspect PCB Source Material Analytical Results
St. Johnsbury Armory
1249 Main Street, St. Johnsbury, Vermont

								PCB Aroclor (ppm)									Total PCBs (ppm)	Preliminary TSCA Category
Sample ID	Sample Date	Exterior/ Interior	Floor	Sample Location / Room	Sampled Material	Description / Notes	Underlying Substrate	1016	1221	1232	1242	1248	1254	1260	1262	1268		
1A	12/17/12	Exterior	Basement	North Side	Door Caulking	Grey	Brick	ND (0.93)	ND (0.93)	ND (0.93)	ND (0.93)	ND (0.93)	12	ND (0.93)	ND (0.93)	ND (0.93)	12	Excluded PCB Product
1B	12/17/12			ND (0.89)				ND (0.89)	ND (0.89)	ND (0.89)	ND (0.89)	14	ND (0.89)	ND (0.89)	ND (0.89)	14		
2A	12/17/12	Exterior	NA	North Side	Window Caulking	White (Newer)	Wood Window Frame / Brick / Sill	ND (0.84)	ND (0.84)	ND (0.84)	ND (0.84)	ND (0.84)	1.5	ND (0.84)	ND (0.84)	ND (0.84)	1.5	Excluded PCB Product
2B	12/17/12			North Side				ND (0.71)	ND (0.71)	ND (0.71)	ND (0.71)	ND (0.71)	ND (0.71)	ND (0.71)	ND (0.71)	ND		
PCB-2C	11/22/16			Unknown				ND (0.73)	ND (0.73)	ND (0.73)	ND (0.73)	ND (0.73)	ND (0.73)	ND (0.73)	ND (0.73)	ND (0.73)	ND	
3A	12/17/12	Exterior	NA	North Side	Window Glazing Compound	White	Wood Window Frame / Glass	ND (0.85)	ND (0.85)	ND (0.85)	ND (0.85)	ND (0.85)	ND (0.85)	ND (0.85)	ND (0.85)	ND (0.85)	ND	Regular Construction Debris
3B	12/17/12			North Side				ND (0.64)	ND (0.64)	ND (0.64)	ND (0.64)	ND (0.64)	ND (0.64)	ND (0.64)	ND (0.64)	ND		
PCB-3C	11/22/16			Unknown				ND (0.75)	ND (0.75)	ND (0.75)	ND (0.75)	ND (0.75)	0.87	ND (0.75)	ND (0.75)	ND (0.75)	0.87	
4A	12/17/12	Exterior	NA	North Side	Window Caulking	Older	Wood Window Frame / Brick / Sill	ND (0.85)	ND (0.85)	ND (0.85)	ND (0.85)	ND (0.85)	26	ND (0.85)	ND (0.85)	ND (0.85)	26	Excluded PCB Product
4B	12/17/12			North Side				ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	3.5	ND (0.50)	ND (0.50)	ND (0.50)	3.5	
PCB-4C	11/22/16			Unknown				ND (0.75)	ND (0.75)	ND (0.75)	ND (0.75)	ND (0.75)	0.81	ND (0.75)	ND (0.75)	ND (0.75)	0.81	
5A	12/17/12	Exterior	First	Under Roof Edge, North Side	Tar Brick Caulking	Black	Brick	ND (0.82)	ND (0.82)	ND (0.82)	ND (0.82)	ND (0.82)	ND (0.82)	ND (0.82)	ND (0.82)	ND (0.82)	ND	Regular Construction Debris
5B	12/17/12							ND (0.71)	ND (0.71)	ND (0.71)	ND (0.71)	ND (0.71)	ND (0.71)	ND (0.71)	ND (0.71)	ND (0.71)	ND	
PCB-5C	11/22/16							ND (0.73)	ND (0.73)	ND (0.73)	ND (0.73)	ND (0.73)	ND (0.73)	ND (0.73)	ND (0.73)	ND (0.73)	ND	
6A	12/17/12	Exterior	NA	"Garage" Roof (i.e. Loading Dock)	"Flashing"	Silver Color	Unknown	ND (0.49)	ND (0.49)	ND (0.49)	ND (0.49)	ND (0.49)	ND (0.49)	ND (0.49)	ND (0.49)	ND (0.49)	ND	Regular Construction Debris
6B	12/17/12							ND (0.61)	ND (0.61)	ND (0.61)	ND (0.61)	ND (0.61)	ND (0.61)	ND (0.61)	ND (0.61)	ND (0.61)	ND	
PCB-6C	11/22/16							ND (0.78)	ND (0.78)	ND (0.78)	ND (0.78)	ND (0.78)	ND (0.78)	ND (0.78)	ND (0.78)	ND (0.78)	ND	
9A	12/17/12	Exterior	Roof	West Edge of Eastern Wing at Gambrel Flashing	Roof Caulking	Black	Unknown	ND (0.93)	ND (0.93)	ND (0.93)	ND (0.93)	ND (0.93)	ND (0.93)	ND (0.93)	ND (0.93)	ND (0.93)	ND	Regular Construction Debris
9B	12/17/12							ND (0.90)	ND (0.90)	ND (0.90)	ND (0.90)	ND (0.90)	ND (0.90)	ND (0.90)	ND (0.90)	ND (0.90)	ND	
PCB-9C	11/22/16							ND (0.77)	ND (0.77)	ND (0.77)	ND (0.77)	ND (0.77)	ND (0.77)	ND (0.77)	ND (0.77)	ND (0.77)	ND	
16A	12/17/12	Interior	Basement	23	Floor Paint	Grey	Concrete	ND (500)	ND (500)	ND (500)	ND (500)	ND (500)	5,700	ND (500)	ND (500)	ND (500)	5,700	PCB Bulk Product
16B	12/17/12	Interior		23				ND (540)	ND (540)	ND (540)	ND (540)	ND (540)	4,600	ND (540)	ND (540)	ND (540)	4,600	
16C	12/17/12	Interior		Unknown				ND (500)	ND (500)	ND (500)	ND (500)	ND (500)	5,700	ND (500)	ND (500)	ND (500)	5,700	
PCB-16D	11/22/16	Interior		Unknown				ND (1700)	ND (1700)	ND (1700)	ND (1700)	ND (1700)	20,000	ND (1700)	ND (1700)	ND (1700)	20,000	
19A	12/17/12	Interior	First	Gym / 17, South Side	Wall Paint	White	Brick	ND (0.89)	ND (0.89)	ND (0.89)	ND (0.89)	ND (0.89)	7.4	ND (0.89)	ND (0.89)	ND (0.89)	7.4	PCB Bulk Product OR Remediation Waste
19B	12/17/12	Interior						ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	7.4	ND (0.50)	ND (0.50)	ND (0.50)	7.4	
PCB-19C	11/22/16	Interior						ND (0.73)	ND (0.73)	ND (0.73)	ND (0.73)	ND (0.73)	9.0	ND (0.73)	ND (0.73)	ND (0.73)	9	
20A	12/17/12	Interior	Basement	26	Floor Paint	Blue	Concrete	ND (0.79)	ND (0.79)	ND (0.79)	ND (0.79)	ND (0.79)	27	ND (0.79)	ND (0.79)	ND (0.79)	27	PCB Bulk Product
20B	12/17/12	Interior		26				ND (0.88)	ND (0.88)	ND (0.88)	ND (0.88)	ND (0.88)	44	ND (5.5)	ND (5.5)	ND (0.88)	44	
PCB-20C	11/22/16	Interior		Unknown				ND (9.5)	ND (9.5)	ND (9.5)	ND (9.5)	ND (9.5)	67	ND (9.5)	ND (9.5)	ND (9.5)	67	

Table 3
Suspect PCB Source Material Analytical Results
St. Johnsbury Armory
1249 Main Street, St. Johnsbury, Vermont

Sample ID	Sample Date	Exterior/ Interior	Floor	Sample Location / Room	Sampled Material	Description / Notes	Underlying Substrate	PCB Aroclor (ppm)									Total PCBs (ppm)	Preliminary TSCA Category
								1016	1221	1232	1242	1248	1254	1260	1262	1268		
P-1	2/3/21	Interior	First Floor	Gym / 17	Paper Under Flooring	Unknown	NA	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	4.4	ND (0.2)	ND (0.2)	ND (0.2)	4.4	Excluded PCB Product
P-2	2/3/21	Interior	Second Floor	4	Tar sealant?	Black tar	Unknown	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND	Regular Construction Debris
P-3	2/3/21	Interior	First Floor	16	Paper Under Flooring	Unknown	NA	ND (0.09)	ND (0.09)	ND (0.09)	ND (0.09)	ND (0.09)	7.8	ND (0.09)	ND (0.09)	ND (0.09)	7.8	Excluded PCB Product
P-4	2/3/21	Interior	Second Floor	3	Wall Paint	Light pink	Plaster	ND (0.3)	ND (0.3)	ND (0.3)	ND (0.3)	ND (0.3)	45	ND (0.3)	ND (0.3)	ND (0.3)	45	PCB Bulk Product OR Remediation Waste
P-5	2/3/21	Interior	Second Floor	9	Wall Paint	Light blue	Plaster	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	22	ND (0.4)	ND (0.4)	ND (0.4)	22	PCB Bulk Product OR Remediation Waste

Notes

Units in milligrams per kilogram (mg/kg, or parts per million - ppm).

"<" = Not detected above the noted reporting limit.

Bold = PCB concentration detected

Red-Shaded = PCB concentration above 50 ppm.

Yellow-Shaded = PCB concentration between 1 and 50 ppm.

ND = PCBs not detected.

NS = Not Sampled

Appendix C

Photograph Log of Suspect PCB-Containing and Asbestos Materials to be Sampled

PHOTOGRAPH LOG OF SUSPECT PCB-CONTAINING AND ASBESTOS MATERIALS TO BE SAMPLED

Additional Hazardous Material Sampling
Former St. Johnsbury Armory
1249 Main Street, St. Johnsbury, Vermont



Photograph 1: Caulk, Material #1



Photograph 2: Caulk, Material #2

PHOTOGRAPH LOG OF SUSPECT PCB-CONTAINING AND ASBESTOS MATERIALS TO BE SAMPLED

Additional Hazardous Material Sampling
Former St. Johnsbury Armory
1249 Main Street, St. Johnsbury, Vermont



Photograph 3: Caulk, Material #3



Photograph 4: Caulk, Material #4

PHOTOGRAPH LOG OF SUSPECT PCB-CONTAINING AND ASBESTOS MATERIALS TO BE SAMPLED

Additional Hazardous Material Sampling
Former St. Johnsbury Armory
1249 Main Street, St. Johnsbury, Vermont



Photograph 5: Caulk, Material #5



Photograph 6: Asphalt Shingle (Material #7) and roofing paper (brown and black, Materials #8, 9) material.

PHOTOGRAPH LOG OF SUSPECT PCB-CONTAINING AND ASBESTOS MATERIALS TO BE SAMPLED

Additional Hazardous Material Sampling
Former St. Johnsbury Armory
1249 Main Street, St. Johnsbury, Vermont



Photograph 7: Materials under gambrel slate roof (Material #10). It appears that at least a tar paper or roofing felt is present; exploration should be conducted to determine if other materials may be present under slate.



Photograph 8: Rubber roofing adhesive (new) (Material #11)

PHOTOGRAPH LOG OF SUSPECT PCB-CONTAINING AND ASBESTOS MATERIALS TO BE SAMPLED

Additional Hazardous Material Sampling
Former St. Johnsbury Armory
1249 Main Street, St. Johnsbury, Vermont



Photograph 9: Celotex board (Material #14). These are loose boards; some of the material is on walls of closet.



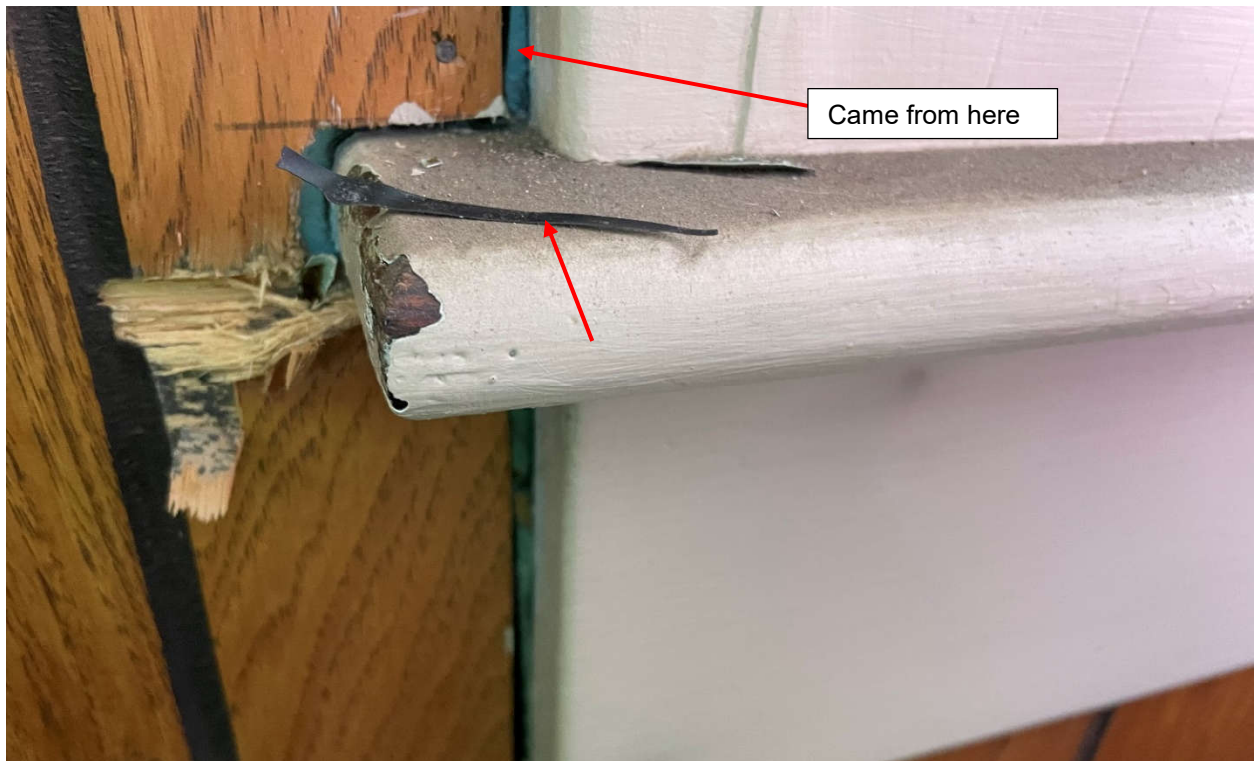
Photograph 10: Thin wall panels (Material #15). This is a loose sheet; most of the material is still on walls.

PHOTOGRAPH LOG OF SUSPECT PCB-CONTAINING AND ASBESTOS MATERIALS TO BE SAMPLED

Additional Hazardous Material Sampling
Former St. Johnsbury Armory
1249 Main Street, St. Johnsbury, Vermont



Photograph 11: Backing paper on wood paneling (Material #18)



Photograph 12: Black paper, potentially behind wall paneling (Material #19)

PHOTOGRAPH LOG OF SUSPECT PCB-CONTAINING AND ASBESTOS MATERIALS TO BE SAMPLED

Additional Hazardous Material Sampling
Former St. Johnsbury Armory
1249 Main Street, St. Johnsbury, Vermont



Photograph 13: Typical drywall and joint compound materials (Materials #20, 21)



Photograph 14: Typical drywall and joint compound materials (Materials #20, 21)

PHOTOGRAPH LOG OF SUSPECT PCB-CONTAINING AND ASBESTOS MATERIALS TO BE SAMPLED

Additional Hazardous Material Sampling
Former St. Johnsbury Armory
1249 Main Street, St. Johnsbury, Vermont



Photograph 15: Joint compound patching materials (Material #22)



Photograph 16: Beige mastic (Material #24) and white sub-floor materials (Material #25)

PHOTOGRAPH LOG OF SUSPECT PCB-CONTAINING AND ASBESTOS MATERIALS TO BE SAMPLED

Additional Hazardous Material Sampling
Former St. Johnsbury Armory
1249 Main Street, St. Johnsbury, Vermont



Photograph 17: Mastic on carpet remnants (Material #26)



Photograph 18: Yellow mastic (Material #27)

PHOTOGRAPH LOG OF SUSPECT PCB-CONTAINING AND ASBESTOS MATERIALS TO BE SAMPLED

Additional Hazardous Material Sampling
Former St. Johnsbury Armory
1249 Main Street, St. Johnsbury, Vermont



Photograph 19: Sprinkler fitting thread sealant (Material #23)



Photograph 20: Residual black mastic, on underside of VFT (Material #28)

PHOTOGRAPH LOG OF SUSPECT PCB-CONTAINING AND ASBESTOS MATERIALS TO BE SAMPLED

Additional Hazardous Material Sampling
Former St. Johnsbury Armory
1249 Main Street, St. Johnsbury, Vermont



Photograph 21: Leveling compound (Material #29)



Photograph 22: Ceramic tile materials (tile, thinset, grout, Materials #30, 31, 32)

PHOTOGRAPH LOG OF SUSPECT PCB-CONTAINING AND ASBESTOS MATERIALS TO BE SAMPLED

Additional Hazardous Material Sampling
Former St. Johnsbury Armory
1249 Main Street, St. Johnsbury, Vermont



Photograph 23: Mastic associated with brown “Battleship” linoleum (if present, Material #33)



Photograph 24: Asphalt roof repair sheeting (Material #13)