Chittenden County Brownfields Program
Site Nomination / Assistance Request Form

For information on types of assistance available and CCRPC's protocol for deciding if, and to what degree to assist a request, see:
http://www.ccrpcvt.org/our-work/economic-development/brownfields/

Site Name: Hamel, Purtill and Dupont Halls

Site's Street Address/Town/Zip Code: 33, 81 and 123 Ethan Allen Avenue, Colchester, VT 05439

Parcel Tax ID #: Map 20, Lot 20-0040000 Property Size (Acres): Undivided interest in larger land parcel

Zoning District: GD-2 zone

Describe current use(s): unoccupied dormitories and offices

Describe former use(s): dormitories and offices

Are there plans for acquisition and/or redevelopment? X Yes ___ No

If yes, attach a separate one to two-page document describing the anticipated benefits of the redevelopment such as housing units, commercial development, jobs, economic impact, recreation, etc. (see Site Evaluation Criteria at link above for the types of information to provide).

Have studies been conducted to identify or assess contamination? X Yes ___ No

If yes, please identify the title, author and date of the report, and if available, send us a PDF:
Andra Liberty, ATC Group Services LLC. Phase I ESA 12.18.20 and Asebstos Abatement Cost Estimate 12.21.20

Potential contaminants include: X Petroleum X Other contaminants

What type(s) of site assessment or cleanup planning assistance are you seeking? Circle all that apply

Phase I Environmental Site Assessment	Phase II Environmental Site Assessment
Soil Monitoring during Construction	Archeological Site Assessment / Recon
Historic Preservation issues	Cleanup / Corrective Action Planning
Other	

Property Owner Information:

Name: Saint Michael's College Signature:

Mailing Address: Salmon Hall 102, 22 Campus Road, Colchester Parkway, Colchester, VT 05439

Phone: 802-654-2524 Email: rrobinson@smcvt.edu

Nomination Submitted By:

Name or Office: Champlain Housing Trust Date Submitted:

Mailing Address: 88 King Street, Burlington, VT 05401

Phone: 802-777-1775 Email: mlescaze@champlainhousingtrust.org

Please Return Site Nomination Form (via PDF is preferred) to:
Dan Albrecht, Senior Planner
Chittenden County Regional Planning Commission 110 West Canal St., Suite 202 Winooski, VT 05404
*Phone: (802) 846-4490 Ext. *29; Email: dalbrecht@ccrpcvt.org*

CHAMPLAIN HOUSING TRUST

To: Dan Albrecht, CCRPC Senior Planner
From: Miranda Lescaze, Director of Real Estate Development
Date: February 19, 2021
Re: Brownfields Site Nomination Form – Anticipated Benefits

Champlain Housing Trust (CHT) and Evernorth (EN), the parent company of Housing Vermont, two nonprofit corporations dedicated to providing perpetually affordable housing to low income Vermont residents seek to repurpose three historic buildings to address the critical need for affordable housing in Chittenden County, Vermont.

This project seeks to redevelop three buildings located at the historic Fort Ethan Allen converting these former St. Michael's College dormitories, currently vacant, into 60 affordable rental homes. The three buildings are all part of the Fort Ethan Allen Historic District initially constructed as a military facility as army barracks for cavalry and artillery regiments, and are listed on the National Register. The 10th Cavalry regiment of Buffalo Soldiers lived here on a four-year tour from 1909-1913. Fort Ethan Allen ceased to have a military use in 1944 and over the years has been converted into a lovely, traditional historic neighborhood with beautiful, historic brick buildings, tree-lined sidewalks and large parade grounds used for recreational purposes. The three buildings proposed for redevelopment were most recently used by Saint Michael's College as student dormitories but have been vacant for several years. The neighborhood includes a mix of condominiums, rental housing and office space in the neighborhood, as well as a well-regarded recital hall, multiple playgrounds and community gardens.

These 60 affordable rental homes at the Fort will provide affordable homes in a neighborhood close to schools, services, shopping and public transportation. The renovation of three historic buildings that have sat vacant for years will revitalize the area. We plan to utilize Historic Tax Credits and have hired a consultant who will ensure we are in compliance with the Secretary of Interior's standards for historic preservation. The creation of 10th Cavalry Apartments would address each of these needs and add 60 permanently affordable homes to the Vermont housing landscape. Lastly, bringing these three buildings that are currently not taxed onto the grand list would bring significant benefit to the Town of Colchester.

We have completed a Phase I Environmental Site Assessment and initial materials testing to understand the potential scope of asbestos abatement. At this stage we are seeking financial assistance from CCRPC to complete next steps including a Phase II assessment, vapor testing in the basements, and possibly testing of wall materials of assumed asbestos to clarify abatement scope. We have discussed the project with Trish Coppolino at VTDEC, are seeking financial support for anticipated cleanup, and are simultaneously applying to the BRELLA program.

Thanks for your consideration and please let me know if you have any questions.

51 Knight Lane · PO Box 1486
Williston, VT 05495
Telephone 802-862-1980
Fax 737-207-8272
www.atcgroupservices.com

December 18, 2020

Mr. Matt Moore
Senior Developer
Evernorth
100 Bank Street, Suite 100
Burlington, VT 05401

Subject: Recommendations for Saint Michaels' College, Colchester, VT Properties
33, 84, 123, 224 Ethan Allen Avenue
Colchester, VT
ATC Project Number: 280EM00638

Dear Matt,

ATC Group Services, LLC (ATC) is pleased to provide these recommendations to Evernorth in response to conclusions identified in the Phase I Environmental Site Assessment (ESA) completed by ATC for the above referenced property (the "property") dated December 18, 2020. The property is defined as the building footprints of Hamel, Purtill, Dupont and Linnehan Halls.

Site Conditions

ATC's Phase I ESA identified the following *business environmental risks* and *recognized environmental conditions* at the property:

- Three 5,000-gallon #2 fuel oil underground storage tanks (USTs) were reportedly closed and removed in 2010. One tank was located at each of at Dupont, Hamel, and Purtill Halls. The closure procedures and documentation met contemporary (2010) standards and the removed tanks are not considered a *recognized environmental condition*.

  Similarly, a 5,000-gallon #2 fuel oil UST was removed from Linnehan Hall in 1998. The closure documentation indicated that the tank was in good condition at the time of removal. The closure procedures and documentation met contemporary (1998) standards and the removed tank is not considered a *recognized environmental condition*

  However, current UST closure standards require laboratory analysis of soils from the tank grave. Therefore, the UST closures are considered a *business environmental risk* and a data gap due to insufficient analysis and documentation of potential chemicals of concern (COCs) in site soils under current site closure standards, as well as the potential costs associated with characterization and proper disposal of soils in the event of property redevelopment.

- Due to the proximity to an urban center, it is possible that "development soils" may be present. The VTDEC defines development soils as: "unconsolidated mineral and organic matter overlying bedrock that contains polycyclic aromatic hydrocarbons

(PAHs), arsenic, or lead that exceed the relevant soil screening for residential soil" (Characterization and Disposal of Development Soils / Act 52, VTDEC, 2016). These compounds are ubiquitous in the environment and are present because they are naturally occurring (arsenic) or have been widely deposited due to anthropogenic activities (i.e. burning fossil fuels and leaded gasoline). Development soils are considered to represent a *business environmental risk.*

- The east-adjacent (presumed upgradient) Vermont PBS building formerly operated a film developing area, and a 2016 Site Investigation identified benzene, ethylbenzene, tetrachloroethylene, and trichloroethylene in sub-slab soil gas and indoor air at that site. The concentrations did not exceed contemporary (2016) regulatory standards, but do exceed current regulatory standards for residential sub-slab soil gas and indoor air. The presence of vapor-phase contamination in excess of residential standards at an adjacent, presumed upgradient site is a *recognized environmental condition* and a *vapor encroachment condition* based on the potential for migration of chemicals of concern, namely chlorinated solvents, onto the property via underground preferential pathways.

- The presence of a utility elevator at Linnehan Hall is a *recognized environmental condition* due to the potential release of petroleum-based hydraulic fluid to the subsurface at the Subject Property. Additionally, the elevator hydraulic fluid is a *business environmental risk* due to the cost of removal of the elevator infrastructure and environmental testing.

Additionally, ATC understands that the scope of the real estate acquisition may expand to include the parking areas to the west of Hamel, Purtill, and Dupont Halls. Saint Michaels' College will maintain ownership of the maintenance garages located within this parcel of land. Due to the distance from the property buildings and presumed groundwater gradient away from the buildings, the historical maintenance operations in these garages are not considered to represent a *recognized environmental condition* to the property as defined in this Phase I ESA. However, if the parking areas are included in the transaction, the maintenance garages would likely be considered a *recognized environmental condition* based on the potential for historical or current release of petroleum-based and solvent COCs to the subsurface of the parking areas, which would then be part of the Subject Property.

Recommendations

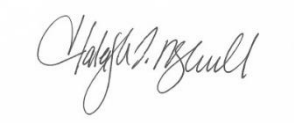
To evaluate the potential for vapor intrusion due the upgradient site, ATC recommends a Limited Vapor Investigation in property basements and potentially first floor areas within the downgradient area of concern of the PBS building, namely Dupont Hall. This vapor investigation should include sampling and analysis of indoor air for the COCs identified in the 2016 Site Investigation at the PBS building.

ATC recommends a Limited Subsurface Investigation at Linnehan Hall to evaluate the potential subsurface impact from the elevator hydraulic components, including semi-volatile organic compounds (SVOCs) and polychlorinated biphenyls (PCBs).

If future development plans include excavation and removal of soils from the property, then the soil should be properly characterized and managed in accordance with the VTDEC Investigation and Remediation of Contaminated Properties Rule (I-Rule, January, 2019).

Thank you for selecting ATC for your environmental management needs. If you have any questions concerning these recommendations, please feel free to contact us at (802) 862-1980.

Sincerely,



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Phase I Environmental Site Assessment

Dupont, Hamel, Linnehan, and Purtill Halls
33, 84, 123, and 224 Ethan Allen Avenue
Colchester, Vermont 05446

ATC Project No. 280EM00638
November 30, 2020

Prepared by
ATC Group Services LLC
51 Knight Lane
Williston, VT 05495
Phone: 802.862.1980

Prepared for
Lynn Mansfield
Evernorth
100 Bank St, Suite 400
Burlington , Vermont 05401

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SIGNATURE PAGE

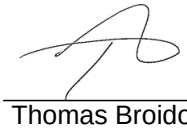
Project Information
Evernorth Ethan Allen Phase I Report
280EM00638
33, 84, 123, and 224 Ethan Allen Avenue
Colchester, Vermont 05446
Reconnaissance Date November 09, 2020

Consultant Information
ATC Group Services LLC
51 Knight Lane
Williston, VT 05495
802.862.1980

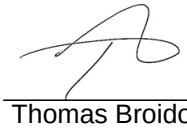
Client Information
Evernorth
100 Bank St, Suite 400
Burlington , Vermont 05401

Environmental Professional Statement
We declare that, to the best of our professional knowledge and belief, we meet the definition of environmental professional as defined in § 312.10 part of 40 CFR 312. We have the specific qualifications based on education, training and experience to assess a property of the nature, history and setting of the Subject Property. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Haleigh Marshall
Site Assessor



Thomas Broido
Principal Scientist
Environmental Professional



Thomas Broido
Principal Scientist
Senior Reviewer

1.0 EXECUTIVE SUMMARY

1.1 Subject Property and Area Description

The property for this Phase I Environmental Site Assessment (ESA) is located at 33, 84, 123, and 224 Ethan Allen Avenue, Colchester, Vermont 05446 (the "Subject Property") and is improved with four mixed-use commercial and residential dormitory buildings. The surrounding area primarily consists of mixed commercial and residential uses. Prior to use as a dormitory, the Subject Property and surrounding area was developed as part of Fort Ethan Allen by the US military.

1.2 Findings, Opinions and Conclusions

ATC Group Services LLC (ATC) has performed this ESA of the Subject Property in conformance with the scope and limitations of ASTM Standard Practice E1527-13. Any exceptions to, or deletions from, this practice are described in Section 2.0 of this report. This assessment has revealed no evidence of *recognized environmental conditions* in connection with the Subject Property, except as noted in the summary of report findings, opinions, and conclusions below:

FINDINGS, OPINIONS AND CONCLUSIONS SUMMARY							
	Report Section	**Further Action?**	**REC**	**CREC**	**HREC**	**Other**	**Detail #/Description**
3.0	User Provided Information	No					
5.1.3	Soils	No				BER	Proximity to an urban center may have contributed to development soils at the Subject Property, BER due to characterization and management costs.
5.2	Historical Records Sources	No					
5.3	Prior Assessments	No				BER	Closure of USTs at SP buildings with no analysis of tank grave soils a BER and a data gap.
5.3	Prior Assessments	N/A	X				Adjoining east VT PBS building has vapor-phase contamination in excess of current residential standards, REC.
5.4.1	Federal, State and Tribal Database Findings	N/A	X				VT PBS building a REC based on vapor-phase contamination in excess of current residential standards.
5.4.2	Local Environmental Records Sources	No					
6.2.1	Hazardous Substances	No					
6.2.2	Underground Storage Tanks	No				BER	Reported closure of UST at Linnehan Hall in 1998 with no analysis of tank grave soils a BER and a data gap.
6.2.3	PCB Containing Electrical Equipment	No					
6.2.4	Hydraulic Equipment	N/A	X			BER	No closure of Linnehan utility elevator, potential release of petroleum-based hydraulic fluid a REC and a BER due to

	Report Section	Further Action?	REC	CREC	HREC	Other	Detail #/Description
							potential investigation, analytical, and clean-up costs.
6.2.5	Nonhazardous Solid Waste	No					
6.2.6	Wastewater	No					
6.2.7	Drains	No					
6.2.8	Sumps/Ejectors	No					
6.2.9	Stormwater Management Systems	No					
7.0	Subsurface Vapor Migration	N/A	X				VEC due to adjacent PBS building with vapor-phase COCs in excess of residential standards.
8.0	Interviews	No					
9.1	Wetlands Document Review	No					
9.2	Flood Plain Document Review	No					

1.3 Significant Assumptions

The assumptions made by the *Environmental Professional* in this report were not considered to have a significant impact on the determination of *recognized environmental conditions* in connection with the Subject Property.

1.4 Significant Data Gaps

Data gaps may have been encountered during the performance of this ESA and are discussed in applicable sections of the report. According to the ASTM Standard Practice E1527-13, data gaps are only significant if "other information and/or professional experience raise reasonable concerns involving the data gap." No *significant data gaps* were identified in this report.

SIGNIFICANT DATA GAP SUMMARY		
	Report Section	Description
3.1	Environmental Liens or Activity and Use Limitations (AULs)	No significant data gap identified.
4.4	Current Uses of Adjoining Properties	No significant data gap identified.
5.1	Physical Setting Sources	No significant data gap identified.
5.2	Historical Records Sources	No significant data gap identified.
5.3	Prior Assessments	Data gaps identified, not significant
5.4	Standard Environmental Records	No significant data gap identified.
6.1	Methodology and Limiting Conditions	No significant data gap identified.
8.0	Interviews	No significant data gap identified.

2.0 INTRODUCTION

2.1 Purpose

The purpose of this ESA was to identify *recognized environmental conditions* (RECs), *controlled recognized environmental conditions* (CRECs) and *historical recognized environmental conditions* (HRECs) in connection with the Subject Property at the time of the site reconnaissance. This report documents the findings, opinions, and conclusions of the ESA.

2.2 Scope of Work

This ESA was conducted in accordance with the ASTM Standard Practice E1527-13, consistent with a level of care and skill ordinarily practiced by the environmental consulting profession currently providing similar services under similar circumstances. Significant additions, deletions, or exceptions to ASTM Standard Practice E1527-13 are noted below or in the applicable sections of this report. The table below summarizes the scope of this ESA, including additional services for conditions beyond the scope of ASTM Standard Practice E1527-13 if authorized by Client. Additional details may be found in Section 10.0, References and Appendix J, Scope of Work.

ESA SCOPE OF WORK
Phase I ESA
Environmental Liens/AULs Land Title Search
Vapor Encroachment Screen
ESA ADDITIONAL SERVICES
Wetlands Document Review
Flood Plain Document Review

2.3 Limitations

ATC has prepared this ESA report using reasonable efforts to identify RECs, CRECs and HRECs associated with hazardous substances or petroleum products in, on or at the Subject Property. Findings contained within this report are based on information collected from observations made on the day(s) of the site reconnaissance and from reasonably ascertainable information obtained from certain public agencies and other referenced sources.

The ASTM Standard Practice E1527-13 recognizes inherent limitations for ESAs, including, but not limited to:

- *Uncertainty Not Eliminated* - An ESA cannot completely eliminate uncertainty regarding the potential for recognized environmental conditions in connection with the Subject Property.
- *Not Exhaustive* - An ESA is not an exhaustive investigation of environmental conditions on the Subject Property.
- *Past Uses of the Subject Property* - ESA requirements only require review of standard historical sources at five year intervals. Therefore, past uses of Subject Property at less than five year intervals may not be discovered.

Users of this report should refer to ASTM Standard Practice E1527-13, Section 10.0 References, Section 11.0 Terminology and Appendix J Scope of Work for further information regarding limitations to the scope of this project.

This report is not definitive and should not be assumed to be a complete and/or specific definition of all conditions above or below grade. Current subsurface conditions may differ from the conditions determined by surface observations, interviews and reviews of historical sources. The most reliable method of evaluating subsurface conditions is through intrusive techniques, which are beyond the scope of this report. Information in this report is not intended to be used as a construction document and should not be used for demolition, renovation, or other Subject Property construction purposes. Any use

of this report by any party, beyond the scope and intent of the original parties, shall be at the sole risk and expense of such user.

ATC makes no representation or warranty that the past or current operations at the Subject Property are, or have been, in compliance with all applicable federal, state and local laws, regulations and codes. This report does not warrant against future operations or conditions, nor does it warrant against operations or conditions present of a type or at a location not investigated. Regardless of the findings stated in this report, ATC makes no warranty that the Subject Property is free from existing or threatened pollution, and ATC is not responsible for consequences or conditions arising from facts not fully disclosed to ATC during the assessment.

An independent data research company provided the government agency database referenced in this report. Information on surrounding area properties was requested for approximate minimum search distances and is assumed to be correct and complete unless obviously contradicted by ATC's observations or other credible referenced sources reviewed during the assessment. ATC shall not be liable for any such database firm's failure to make relevant files or documents properly available, to properly index files, or otherwise to fail to maintain or produce accurate or complete records.

ATC makes no warranty, guarantee or certification regarding the quality, accuracy or reliability of any prior report provided to ATC and discussed in this ESA report. ATC expressly disclaims any and all liability for any errors or omissions contained in any prior reports provided to ATC and discussed in this ESA report.

ATC used reasonable efforts to identify evidence of aboveground and underground storage tanks and ancillary equipment on the Subject Property during the assessment. "Reasonable efforts" were limited to observation of accessible areas, review of referenced public records and interviews. These reasonable efforts may not identify subsurface equipment or evidence hidden from view by things including, but not limited to, snow cover, paving, construction activities, stored materials and landscaping.

Any estimates of costs or quantities in this report are approximations for commercial real estate transaction due diligence purposes and are based on the findings, opinions and conclusions of this assessment, which are limited by the scope of the assessment, contractual agreement(s) with client, schedule demands, cost constraints, accessibility limitations and other factors associated with performing the ESA. Subsequent determinations of costs or quantities may vary from the estimates in this report. The estimated costs or quantities in this report are not intended to be used for financial disclosure related to the Financial Accounting Standards Board (FASB) Statement No. 143, FASB Interpretation No. 47, Sarbanes/Oxley Act or any United States Securities and Exchange Commission reporting obligations, and may not be used for such purposes in any form without the express written permission of ATC.

ATC is not a professional title insurance or land surveyor firm and makes no guarantee, express or implied, that any land title records acquired or reviewed in this report, or any physical descriptions or depictions of the Subject Property in this report, represent a comprehensive definition or precise delineation of Subject Property ownership or boundaries.

The "Environmental Professional Statement" in this report does not "certify" the findings contained in this report and is not a legal opinion of such *Environmental Professional*. The statement is intended to document ATC's opinion that an individual meeting the qualifications of an *Environmental Professional* was involved in the performance of the assessment and that the activities performed by, or under the supervision of, the *Environmental Professional* were performed in conformance with the standards and practices set forth in 40 CFR Part 312 per the methodology in ASTM Standard Practice E1527-13 and the scope of work for this assessment.

Per ASTM Standard Practice E1527-13, Section 6, User Responsibilities, the User of this assessment has specific obligations for performing tasks during this assessment that will help identify the possibility of recognized environmental conditions in connection with the Subject Property. Failure by the User to fully comply with the requirements may impact their ability to use this report to help qualify for *Landowner Liability Protections* (LLPs) under Comprehensive Environmental Response, Compensation,

and Liability Act (CERCLA). ATC makes no representations or warranties regarding a User's qualification for protection under any federal, state or local laws, rules or regulations.

In accordance with the ASTM Standard Practice E1527-13, this report is presumed to be valid for a six-month period after the date of the site reconnaissance. If the report is older than 180 days, the following information must be updated in order for the report to be valid: (1) regulatory review, (2) site visit, (3) interviews, (4) specialized knowledge and (5) environmental liens search. Reports older than one year may not meet the ASTM Standard Practice E1527-13 and therefore, the entire report must be updated to reflect current conditions and Subject Property-specific information.

2.4 Special Terms and Conditions (User Reliance)

This report is for the use and benefit of, and may be relied upon by, Evernorth, and any of its affiliates and their respective successors and assigns, in connection with a commercial real estate transaction involving the Subject Property. No third party is authorized to use this report for any purpose. Any use by or distribution of this report to third parties, without the express written consent of ATC, is at the sole risk and expense of such third party.

3.0 USER PROVIDED INFORMATION

The following section summarizes information and documentation provided by Evernorth (User) with regard to User Responsibilities outlined in ASTM Standard Practice E1527-13. Documentation may be found in Appendix D or as referenced elsewhere in this report.

3.1 Environmental Liens or Activity and Use Limitations (AULs)

The User provided no information regarding the existence of Subject Property environmental liens or AULs. ATC contracted Environmental Data Resources, Inc. (EDR) to perform an environmental lien search of land title records for the Subject Property. According to the report, no environmental liens or AULs were identified for the Subject Property. A copy of the report is included in Appendix L.

3.2 Specialized Knowledge or Experience of the User

The User provided no information based on specialized knowledge or experience regarding RECs associated with the Subject Property.

3.3 Significant Valuation Reduction for Environmental Issues

The User provided no information regarding a significant valuation reduction for environmental conditions associated with the Subject Property.

3.4 Owner, Property Manager, and Occupant Information

The User identified the Subject Property owner and manager as Saint Michaels' College, the Subject Property is currently unoccupied.

3.5 Reason For Performing ESA

According to information provided by the User, this Phase I ESA will be used in connection with a commercial real estate transaction to identify RECs associated with the Subject Property.

3.6 User Provided Documentation

The User provided the following prior assessments or other documentation associated with environmental conditions in connection with the Subject Property. Further discussion of any prior assessment reports may be found in Section 5.3 and related sections of this report.

USER PROVIDED DOCUMENTATION		
Title	**Date**	**Author and/or Source**
Asbestos Inspection Report: Dupont Building	September, 1993	Dennison Environmental Services, provided by the User
Dupont Hall UST Closure Report and UST Closure Form	June-August, 2010	The Johnson Company and VT DEC UST Management Division, provided by the User
Hamel Hall UST Closure Report and UST Closure Form	June-August, 2010	The Johnson Company and VT DEC UST Management Division, provided by the User
Asbestos Survey, Linnehan Hall, Fort Ethan Allen	March, 1997	K-D Associates, provided by the User
Purtill Hall UST Closure Report and UST Closure Form	June-August, 2010	The Johnson Company and VT DEC UST Management Division, provided by the User
Asbestos Survey, Purtill Hall, Fort Ethan Allen	March, 1997	K-D Associates, provided by the User

4.0 SITE DESCRIPTION

4.1 Location and Legal Description

The Subject Property address is 33, 84, 123, and 224 Ethan Allen Avenue, Colchester, Chittenden, Vermont 05446. According to information obtained from the Town of Colchester, the Subject Property is comprised of part of one parcel of land identified as Property Identification Number 20-004000-0000000. A Site Vicinity Map is located in Appendix A. A Site Plan is located in Appendix B. Site Photographs are provided in Appendix C.

4.2 Area Description

The Subject Property is located in an area generally characterized by commercial and residential uses. Surface topography across the Subject Property is generally flat. The surface topography in the area adjoining the Subject Property is relatively flat with a slope towards the northwest. The specific adjacent property uses are discussed in Section 4.4

4.3 Property Improvements and Use

The Subject Property consists of four mixed-use commercial and residential dormitory buildings with basements and attic mechanical spaces. The Subject Property buildings were constructed between 1903 and 1910 by the US Army, a discussion or prior ownership and use is included in Section 5.2.10.

Hamel and Purtill Halls are of the same design and consist of dormitories and bathrooms on the first and second floors. The ground floors consist of mechanical spaces, storage and classroom spaces, laundry facilities, and bathrooms. The attics are unfinished and have ventilation ducts for the building through the roof. The buildings were reportedly constructed in 1903.

Dupont Hall is similar in design to Hamel and Purtill Halls, but has been renovated into office spaces on the first and second floors for commercial tenants (i.e. psychologists and non-profit entities). The ground floor of the Dupont building consists of mechanical spaces, storage and classroom spaces, laundry facilities, and bathrooms. The attic of the Dupont building has been finished with flooring and has ventilation ducts for the building through the roof. This building was reportedly constructed in 1903.

Linnehan Hall consists of dormitory and bathroom spaces on the first and second floors. The ground floor consists of mechanical and storage spaces, and the attic is partially finished with mechanical equipment and ventilation ducts in the unfinished portion. A utility elevator in Linnehan has been blocked from use but not decommissioned, and is discussed in greater detail in Section 6.2.5. A Site Plan is present in Appendix B.

The following provides a general description of Subject Property use.

SUBJECT PROPERTY IMPROVEMENTS	
Improvement	**Description**
General Subject Property Use	Residential and commercial office space.
Public Roads	Ethan Allen Avenue runs through the Subject Property, Hegeman Avenue adjoins the Subject Property to the west.
Paved or Concrete Areas (including parking)	Parking areas, sidewalks, and roadways run through and adjoin the Subject Property
Unimproved Areas	None
Landscaped Areas	Grass areas between Subject Property buildings
Surface Water	None
Potable Water Source	Town of Essex
Sanitary Sewer Utility/Septic	Town of Essex
Storm Sewer Utility	Town of Essex
Electrical Utility	Green Mountain Power
Natural Gas Utility	VT Gas
Number of Buildings/Description	Four

Improvement	Description
Current Occupancy Status	100% Unoccupied
Unoccupied Buildings/ Structures	All Subject Property buildings unoccupied, see above.
Type of Use	Residential with commercial spaces

The following provides additional descriptions of Subject Property buildings and use.

SUBJECT PROPERTY BUILDINGS	
Improvement	**Description**
Hamel Hall, 33 Ethan Allen Drive	Constructed 1903, two floors finished with dormitories and bathrooms, plus basement and attic spaces. Approximately 38,212 square feet, brick and concrete foundation, wood-framed, with brick facade and slate and metal roofing. Finished interior spaces consist of plaster or gypsum wallboard system, with carpeting, vinyl or ceramic tile flooring. Heat is provided via fuel-oil fired boiler which circulates hot water to radiators. No cooling system or emergency power.
Purtill Hall, 84 Ethan Allen Drive	Constructed 1903, two floors finished with dormitories and bathrooms, plus basement and attic spaces. Approximately 38,212 square feet, brick and concrete foundation, wood-framed, with brick facade and slate and metal roofing. Finished interior spaces consist of plaster or gypsum wallboard system, with carpeting, vinyl or ceramic tile flooring. Heat is provided via fuel-oil fired boiler which circulates hot water to radiators. No cooling system or emergency power.
Dupont Hall, 123 Ethan Allen Drive	Constructed 1903, two floors finished with dormitories and bathrooms, plus basement and attic spaces. Approximately 32,976 square feet, brick and concrete foundation, wood-framed, with brick facade and slate and metal roofing. Finished interior spaces consist of plaster or gypsum wallboard system, with carpeting, vinyl or ceramic tile flooring. Heat is provided via fuel-oil fired boiler which circulates hot water to radiators. No cooling system or emergency power.
Linnehan Hall, 224 Ethan Allen Drive	Constructed approximately 1910, two floors finished with dormitories and bathrooms, plus basement and attic spaces. Approximately 16,700 square feet, brick and concrete foundation, wood-framed, with brick facade and slate and metal roofing. Finished interior spaces consist of plaster or gypsum wallboard system, with carpeting, vinyl or ceramic tile flooring. Heat is provided via fuel-oil fired boiler which circulates hot water to radiators. No cooling system or emergency power. Unused utility elevator has been blocked but not decommissioned.

4.4 Current Uses of Adjoining Properties

The following summarizes current uses of the adjoining properties, including environmental conditions, features, or operations that were observed or suspected to be present.

Occupant(s) Name and Current Use	Address	Direction From Subject Property	Potential Environmental Conditions, Features or Operations
Saint Michaels' College, academic buildings.	169, 223, 282 Ethan Allen Avenue	North	None
Residential tenants, commercial residential buildings	Barnes Avenue, Coolidge Court	South	None
Residential tenants (County Apartments), Vermont PBS	University Lane, Catamount Avenue, 204 Ethan Allen Avenue	East	None from residential properties, Vermont PBS may have electronic waste. County Apartments/VT PBS identified as a VT SHWS and a Brownfields project.

Occupant(s) Name and Current Use	Address	Direction From Subject Property	Potential Environmental Conditions, Features or Operations
Saint Michaels' College, maintenance and support buildings	513-377 Hegeman Avenue	West	Potential hazardous material releases from receiving, maintenance, and repair facilities.

The east and west adjoining properties were identified in the regulatory agency databases and are discussed further in Section 5.4.1.

Based on a curbside reconnaissance of the surrounding area and documented regulatory status, the remaining adjoining properties are not expected to pose an environmental concern or REC to the Subject Property. These adjoining properties are further discussed in Section 5.4.1. A Site Plan illustrating the locations of the aforementioned adjacent properties is included in Appendix B.

5.0 RECORDS REVIEW

5.1 Physical Setting Sources

5.1.1 Topography

Based on the United States Geological Survey (USGS) 7.5-Minute Series Topographic Map, Colchester Quadrangle, dated 2012; the Subject Property is located 320 feet above mean sea level (MSL). The Subject Property is relatively flat and the surrounding area slopes toward the northwest and southeast. A copy of the topographic map is included in Appendix A.

5.1.2 Geology

The subject property is located in an area underlain by the Paleozoic Era Lower Ordovician and Cambrian Carbonate Rocks.

5.1.3 Soils

According to soils data compiled by EDR from digitized United States Department of Agriculture (USDA) maps and resources, the Subject Property is underlain by Adams loamy sand. Adams loamy sand is the predominant soil type and is characterized by high infiltration rates with soils with moderately coarse or coarse textures. A typical profile of Adams loamy sand includes zero to 26 inches below ground surface (bgs) of loamy sand, and 26 to 70 inches bgs of loamy sand.

ATC did not observe evidence of imported fill soils on the Subject Property during the site reconnaissance or during review of historical sources completed during the course of this assessment.

Additionally, due to the proximity of the property to an urban center, it is possible that "development soils" may be present. The VTDEC defines development soils as: "unconsolidated mineral and organic matter overlying bedrock that contains polycyclic aromatic hydrocarbons (PAHs), arsenic, or lead that exceed the relevant soil screening for residential soil" (Characterization and Disposal of Development Soils / Act 52,VTDEC, 2016). These compounds are ubiquitous in the environment and are present because they are naturally occurring (arsenic) or have been widely deposited due to anthropogenic activities (i.e. burning fossil fuels and leaded gasoline).
If future development plans include excavation and removal of soils from the property then the soil should be properly characterized and managed in accordance with the VTDEC Investigation and Remediation of Contaminated Properties Rule (I-Rule, January 2019). Development soils are considered to represent a BER.

5.1.4 Hydrology

No past groundwater investigations have been identified for the Subject Property; thus, no site-specific groundwater information was available. However, regional groundwater flow direction is generally influenced by major hydrogeologic features such as a river or lake. Surface and/or bedrock topography may also influence regional groundwater flow direction. The available hydrogeologic information indicates that the presumed local groundwater flow direction is to the northwest towards an unnamed brook, which is a tributary of the Winooski River, located approximately 1,730 feet from the Subject Property. It should be noted that local geologic features may cause local groundwater flow direction to differ from the regional flow direction. Local hydraulic gradient at the Subject Property was interpreted based on a review of the *Colchester, Vermont* USGS Topographic Map. Therefore, in assessing potential external environmental impact, properties located directly southeast (presumed upgradient) of the Subject Property are of primary concern. Estimated groundwater levels and/or flow directions may vary due to seasonal fluctuations in precipitation, local usage demands, geology, underground structures, or dewatering operations, and can be more accurately determined through the installation of groundwater monitoring wells.

5.2 Historical Records Sources

ATC's findings pertaining to Subject Property and surrounding area historical uses are presented in the following summary. Notable findings from historical sources are discussed below the table.

HISTORICAL USE SUMMARY				
Period	**Subject Property**	**Surrounding Area**	**Source(s)**	**Intervals/Comments**
Prior to 1940	Military installation	Military installation	Recorded Land Title Records, Historical accounts	Intervals greater than five years, not significant.
1940 - 1960	Military installation	Military installation	Aerial Photographs, Recorded Land Title Records, Topographic Maps, Historical accounts	Intervals greater than five years, not significant.
1961 - 1980	Private college	Residential and light commercial	Aerial Photographs, Recorded Land Title Records, Topographic Maps	Intervals greater than five years, not significant.
1981 - 2000	Private college	Residential and light commercial	Aerial Photographs, Recorded Land Title Records, Topographic Maps, City / Street Directories	Intervals greater than five years, not significant.
2001 - present	Private college	Residential and light commercial	Aerial Photographs, Property Tax Files, Recorded Land Title Records, Topographic Maps, City / Street Directories	Intervals greater than five years, not significant.

According to the review of historical records, the Subject Property was developed for use in the early 1900's for use as part of the Fort Ethan Allen military base. The Subject Property buildings were constructed during this era. In 1964, ownership of the Subject Property and surrounding areas was transferred to Saint Michael's College. The Subject Property buildings were renovated in the 1980's for use as dormitories.

5.2.1 Aerial Photographs

ATC reviewed available aerial photographs of the Subject Property and surrounding area as provided by EDR. Available aerial photographs ranged from 1942 to 2016. The following are descriptions and interpretations from the aerial photograph review. Copies of reproducible aerial photographs are included in Appendix F.

AERIAL PHOTOGRAPH SUMMARY			
Year	**Scale**	**Subject Property**	**Surrounding Area**
1942, 1972, 1984, 1986	1" = 500'	Subject Property developed with four buildings, consistent with Fort Ethan Allen development.	Areas to north, east, and west developed with Forth Ethan Allen buildings
1992, 1994, 1999	1992: 1" = 750' 1994: 1" = 1,000' 1999: 1" = 500'	Developed with four buildings, consistent with previous aerial photographs	Increased residential development to south compared to previous (1986) aerial photograph.
2006, 2009, 2012, 2016	1" = 500'	Developed with four buildings, consistent with previous aerial photographs.	Increased residential development to south compared to previous (1999) aerial photograph.

5.2.2 Fire Insurance Maps

A search for fire insurance maps for the Subject Property and surrounding area was conducted by EDR. No such maps for the Subject Property and surrounding area were available.

5.2.3 Property Tax Files

ATC reviewed reasonably ascertainable tax files at offices of the Town of Colchester for historical ownership information pertaining to the Subject Property. The table below presents the results of the historical ownership information. Documentation is included in Appendix G.

TAX RECORDS OWNERSHIP SUMMARY	
Owner	**Date**
Saint Michaels' College	7/29/1964

5.2.4 Recorded Land Title Records

ATC reviewed recorded land title records for the Subject Property at the offices of the Town of Colchester. Public deed records were reviewed from 1964. The current owner was listed as Saint Michael's College. The previous owner was the United States Department of Health, Education, and Welfare. No prior deed reference was made, see Section 5.2.10 for a discussion of historical ownership and use.

5.2.5 Historical USGS Topographic Maps

ATC reviewed available historical USGS Topographic Maps for information regarding past uses of the Subject Property and surrounding area provided by EDR. The following are descriptions and interpretations from the topographic map review. Documentation is included in Appendix G.

TOPOGRAPHIC MAPS SUMMARY		
Year	**Subject Property**	**Surrounding Area**
1913, 1915	Structures indicated at Subject Property are consistent with Fort Ethan Allen development, building footprints are consistent with conditions observed during site reconnaissance.	Development to north and west of Subject Property consistent with Forth Ethan Allen development, area indicated as Fort Ethan Allen.
1944, 1948	Consistent with previous (1913, 1919) topographic maps, Subject Property located within area defined as Fort Ethan Allen.	Increased residential development to east along Essex Road and Dalton Drive compared to previous (1919) topographic map. Saint Michael's College indicated to south along VT Route 15.

Year	Subject Property	Surrounding Area
1972, 1987	Consistent with previous (1944, 1948) topographic maps, Subject Property no longer located within area defined as a Military Reservation.	Increased residential development to east along Ethan Allen Drive compares to previous (1944, 1948) topographic maps.
2012	No structures indicated	No structures indicated, Saint Michael's College indicated to south along VT Route 15.

5.2.6 City Directories

Research regarding the availability of historical city directories was obtained from EDR. The Subject Property was not listed in any of the directories (1992, 1995, 2000, 2005, 2010, 2014, 2017) reviewed. Listings to the north and south of the Subject Property are predominantly residential and light commercial. Documentation is included in Appendix G.

5.2.7 Building Department Records

ATC reviewed available historical building department records at the Town of Colchester online assessor's database for information regarding past uses of the Subject Property and surrounding area. No historical use information was available for the Subject Property, all Subject Property buildings are classified as commercial or private college use. Available assessor's cards are included in Appendix G.

5.2.8 Zoning/Land Use Records

ATC attempted to review available historical zoning/land use records at offices of the Town of Colchester for information regarding past uses of the Subject Property and surrounding area. No historical zoning/land use information was readily available. The Subject Property is zoned General Development 2 (GD2), for commercial, light industry, and compatible multi-family dwellings for the Forth Ethan Allen neighborhood.

5.2.9 EDR Exclusive Historical Records

ATC reviewed potential "high risk historical records" search results provided by EDR. The EDR Exclusive Historical Record database is composed of selected national historical collections of business directories, proprietary industry data, government agency archives and other records including gas stations, dry cleaners, manufactured gas plants, landfills and leaking underground storage tank sites that were available to EDR researchers.

No EDR Exclusive Historical Record database listings were available for the Subject Property or surrounding area.

5.2.10 Other Historical Sources

EDR reports that, according to the Formerly Used Defense Sites (FUDS) database, the Subject Property was formerly part of Fort Ethan Allen, which encompassed approximately 1,200 acres and was owned by the US Army prior to 1940 and was used as a military post from the early 1900's to approximately 1957. The Army built barracks, stables, vehicle storage, and maintenance offices at the Fort. In 1962, approximately 363 aces were transferred to the General Services Administration (GSA) as excess, and the land was sold in thirteen parcels to various entities in the area, including the State of Vermont, Town of Essex, University of Vermont, Saint Michael's College, and multiple corporate and private individuals.

According to the User, the Subject Property buildings were constructed by the Army and used as barracks (Hamel & Purtill), stables (Dupont), and the post exchange store (Linnehan) prior to the 1964 acquisition and renovation (1980's) by Saint Michaels' College.

5.3 Prior Assessments

The following table provides a summary of prior assessment findings, conclusions and recommendations reviewed by ATC. Documentation is included in Appendix H.

PRIOR REPORT SUMMARY			
Author / Title / Source	**Report Date**	**Environmental Conditions, Features or Operations**	**Conclusions & Recommendations**
The Johnson Company, UST Closure at St. Michael's College, Colchester (Dupont), provided by user	May 20, 2010	The report details the removal and replacement of a 5,000-gallon #2 fuel oil UST located to the south of the north wing of the building. No visual, olfactory, or PID evidence of contamination was identified in the tank grave and the tank and piping were reportedly in good to excellent condition.	The former UST was removed and closed following satisfaction of contemporary standards.
The Johnson Company, UST Closure at St. Michael's College, Colchester (Hamel), provided by user	May 20, 2010	The report details the removal and replacement of a 5,000-gallon #2 fuel oil UST located to the north of the building. No visual, olfactory, or PID evidence of contamination was identified in the tank grave and the tank and piping were reportedly in good to excellent condition.	The former UST was removed and closed following satisfaction of contemporary standards.
The Johnson Company, UST Closure at St. Michael's College, Colchester (Purtill), provided by user	May 20, 2010	The report details the removal of a 5,000-gallon #2 fuel oil UST located to the north of the building. No visual, olfactory, or PID evidence of contamination was identified in the tank grave and the tank and piping were reportedly in good to excellent condition.	The former UST was removed and closed following satisfaction of contemporary standards.
KAS, Inc., Phase II Environmental Site Assessment Report, VT PBS, 204 Ethan Allen Ave. Provided by the VT DEC.	September 16, 2016	The report details the investigation of a film-developing area at the PBS building. A sub-slab soil gas sample was collected in the vicinity of a former in-slab acid neutralization tank. An indoor air sample was also collected. Identified COCs were below applicable contemporary standards. A building drain connection to the municipal wastewater system was also verified.	All identified compounds were below applicable standards, KAS recommended no further investigation.

Notwithstanding the limitations presented below, ATC agrees with the conclusions of the prior reports, based on the presented report research and field observations.

The UST closures are not considered a REC based on the satisfaction of contemporary tank closure standards, however, current UST closure standards require laboratory analysis of soils from the tank

grave. Therefore, the UST closures are considered a BER and a data gap due to insufficient analysis and documentation of COCs in site soils under current site closure standards.

The Phase II investigation at 204 Ethan Allen Drive indicated COCs did not exceed contemporary (2016) regulatory standards, however the concentrations reported in the 2016 investigation exceed current sub-slab and indoor air standards for residential spaces. COCs identified include benzene, ethylbenzene, tetrachloroethylene, and trichloroethylene. The potential presence of subsurface vapor-phase COCs which exceed current vapor intrusion standards in the vicinity of Subject Property buildings (specifically Linnehan and Dupont Halls), is considered a REC. Further discussion of vapor concerns can be found in Section 7.0.

ATC makes no warranty, guaranty or certification regarding the quality, accuracy or reliability of any third-party prior assessment discussed in this report. ATC makes no claim that any prior assessment information may be relied upon by any party other than the original user during the shelf-life of that report. ATC expressly disclaims any and all liability for any errors or omissions contained in any third-party prior assessments discussed in this report.

5.4 Standard Environmental Records

The regulatory agency database report discussed in this section, provided by Environmental Data Resources, Inc. (EDR) of Shelton, Connecticut, was reviewed for information regarding reported use or release of hazardous substances and petroleum products on or near the Subject Property. Unless otherwise noted, the information provided by the regulatory agency database report and other sources referenced in this report, were considered sufficient for REC, CREC, HREC or de minimis condition determinations without conducting supplemental agency file reviews. ATC also reviewed the "unmappable" (also referred to as "orphan") listings within the database report, cross-referencing available address information and facility names. Unmappable sites are listings that could not be plotted with confidence, but are potentially in the general area of the Subject Property, based on the partial street address, city, or zip code. Unmappable site that were identified by ATC as being within the approximate minimum search distance from the Subject Property, based on the site reconnaissance and/or cross-referencing to mapped listings, are included in the discussion within this section. The complete regulatory agency database report may be found in Appendix E.

The following is a summary of the findings of the regulatory agency database review.

SUMMARY OF FEDERAL, STATE AND TRIBAL DATABASE FINDINGS								
Regulatory Database	**Target Property**	**Search Distance (Miles)**	**< 1/8**	**1/8 - 1/4**	**1/4 - 1/2**	**1/2 - 1**	**> 1**	**Total Plotted**
National Priority List (NPL)		1	0	0	0	0	NR	0
Proposed National Priority List Sites (Proposed NPL)		1	0	0	0	0	NR	0
Federal Superfund Liens (NPL LIENS)		1	0	0	0	0	NR	0
National Priority List Deletions (Delisted NPL)		1	0	0	0	0	NR	0
Corrective Action Report (CORRACTS)		1	0	0	0	0	NR	0
RCRA - Treatment, Storage and Disposal (RCRA-TSDF)		0.5	0	0	0	NR	NR	0
RCRA - Large Quantity Generators (RCRA-LQG)		0.25	0	0	NR	NR	NR	0
RCRA - Small Quantity Generators (RCRA-SQG)		0.25	0	1	NR	NR	NR	1
Engineering Controls Sites List (US ENG CONTROLS)		0.5	0	0	0	NR	NR	0
Emergency Response Notification System (ERNS)		TP	NR	NR	NR	NR	NR	0

Regulatory Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
Department of Defense Sites (DOD)		1	1	0	0	0	NR	1
Formerly Used Defense Sites (FUDS)		1	1	0	0	0	NR	1
Land Use Control Information System (LUCIS)		0.5	0	0	0	NR	NR	0
Superfund Enterprise Management System (SEMS)		0.5	0	1	0	NR	NR	1
Superfund Enterprise Management System Archive (SEMS-ARCHIVE)		0.5	0	0	0	NR	NR	0
Institutional Controls Sites List (US INST CONTROLS)		0.5	0	0	0	NR	NR	0
Federal Facility Site Information listing (FEDERAL FACILITY)		0.5	0	0	0	NR	NR	0
RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators) (RCRA-VSQG)		0.25	1	2	NR	NR	NR	3
RCRA - Non Generators / No Longer Regulated (RCRA NonGen / NLR)		0.25	2	1	NR	NR	NR	3
Underground Storage Tank Listing (FEMA UST)		0.25	0	0	NR	NR	NR	0
Hazardous Waste Manifest Data (VT VT MANIFEST)		0.25	1	1	NR	NR	NR	2
Institutional Control Sites Listing (VT INST CONTROL)		0.5	0	0	0	NR	NR	0
Facility and Manifest Data (NY NY MANIFEST)		0.25	0	1	NR	NR	NR	1
Landfills and Transfer Stations (VT SWF/LF)		0.5	0	0	0	NR	NR	0
Engineering Controls Site Listing (VT ENG CONTROLS)		0.5	0	0	0	NR	NR	0
Sites Database (VT LAST)		0.5	0	0	0	NR	NR	0
State of Vermont Underground Storage Tank Database (VT UST)	2	0.25	4	4	NR	NR	NR	10
Hazardous Waste Generators (VT HW GEN)		0.25	1	3	NR	NR	NR	4
Sites Database (VT SHWS)		1	1	1	1	11	NR	14
Above Ground Storage Tanks (VT AST)		0.25	5	0	NR	NR	NR	5
Tier 2 Data Listing (VT TIER 2)	2	TP	NR	NR	NR	NR	NR	2
Brownfields Site LIst (VT BROWNFIELDS)		0.5	1	0	0	NR	NR	1
Sites Database (VT LUST)		0.5	1	0	2	NR	NR	3
Leaking Underground Storage Tanks on Indian Land (INDIAN LUST)		0.5	0	0	0	NR	NR	0

Regulatory Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
Underground Storage Tanks on Indian Land (INDIAN UST)		0.25	0	0	NR	NR	NR	0
Voluntary Cleanup Priority Listing (INDIAN VCP)		0.5	0	0	0	NR	NR	0

5.4.1 Federal, State and Tribal Agency Database Findings

The Subject Property was identified in the following federal, state, and tribal agency databases searched.

Dupont, Hamel Halls, Saint Michael's College
33, 123 Ethan Allen Avenue
Colchester, 05439
Federal Databases: None listed
State Databases: VT TIER 2, VT UST
Tribal Databases: None listed

Approximate Distance from the Subject Property: Not Applicable (N/A) - Subject Property
Approximate Direction from the Subject Property: N/A - Subject Property
Assumed Groundwater Gradient: N/A - Subject Property

Regulatory Data Summary: The Subject Property buildings are listed in Vermont underground storage tank databases, as well as the VT Tier 2 emergency response database, due to the current or former presence of fuel storage tanks. The Tier 2 database is maintained for the benefit of emergency response personnel and lists cleaning and maintenance materials stored in Subject Property buildings. No violations or instances of noncompliance were identified.
Discussion: Specific discussion of current and former underground storage tanks is included in Sections 5.3 and 6.2.2. The Tier 2 listing is not considered a REC based on the nature of materials identified.

The following listing with a known or significant potential for release and impact at the Subject Property was identified in the federal, state and tribal agency databases searched.

County Apartments/Vermont PBS
204 Ethan Allen Drive
Colchester, 05439
Federal Databases: None listed
State Databases: VT Brownfields, VT SHWS
Tribal Databases: None listed

Approximate Distance from the Subject Property: Adjoining
Approximate Direction from the Subject Property: East-southeast
Assumed Groundwater Gradient: Upgradient

Regulatory Data Summary: As summarized in Sections 5.3 and 7.0, the VT PBS building was listed in the Vermont Brownfields and State Hazardous Waste Site databases in 2016 due to the documented presence of vapor-phase COCs in sub-slab soil gas and indoor air. Identified concentrations of COCs did not exceed applicable contemporary (2016) standards, however, the concentrations exceed current applicable standards for sub-slab soil gas and indoor air in residential spaces. The site was designated Low priority (contamination identified, but no impact on sensitive receptors) under 2016 standards.
Discussion: The documented presence of vapor-phase COCs which exceed residential vapor intrusion standards is considered a REC and a VEC based on the presumed migration gradient and proximity to Subject Property buildings.

Additional listings for garage buildings owned by Saint Michael's College along Hegeman Avenue were identified in the database search, as well as other sites. However, based on distance, topography, assumed groundwater gradient, current regulatory status, and/or the absence of reported releases, none of the garages or other sites listed in the federal, state or tribal agency databases searched are considered to represent a likely past, present or material threat of release in, on, or at the Subject Property. Given the physical setting characteristics of the Subject Property and surrounding area, supplemental agency file reviews were not warranted to verify the database report information.

5.4.2 Local Environmental Records Sources

Local Health Department

ATC attempted to speak with Denise Johnson-Terk, the Health Officer for the Town of Colchester, but had not received a response at the time of this report. If a response which alters the findings of this report is received, ATC will issue an addendum at that time.

Fire Department

ATC attempted to speak with Eric Haversang, the Saint Michael's College Fire Unit chief, regarding instances of material release or mismanagement at the Subject Property, but had not received a response at the time of this report. If a response which alters the findings of this report is received, ATC will issue an addendum at that time.

Electrical Utility

ATC spoke with a representative for Green Mountain Power (GMP), who confirmed that the utility provides electricity to the Subject Property. ATC did not observe evidence of transformers in the Subject Property buildings or mounted on utility poles in the vicinity of the Subject Property.

Water Utility

ATC spoke with a representative of the Town of Essex, who confirmed that the Essex Public Work Department provides potable water and sanitary utilities to the Subject Property. The representative did not know the age of the system in the vicinity of the Subject Property. The Town of Essex uses water purchased from the Champlain Water District, the source is the Shelburne Bay of Lake Champlain.

6.0 SITE RECONNAISSANCE

The following is a summary of the date, participants, and weather conditions associated with the site reconnaissance.

SITE OBSERVATION SUMMARY	
Visit Details	
Date	November 9, 2020
ATC Assessor	Haleigh Marshall, Staff Scientist
Escorted By	Matt Moore, Evernorth
General Weather Conditions	Sunny, 60's, clear

6.1 Methodology and Limiting Conditions

The site reconnaissance consisted of visual and/or physical observations of: the Subject Property and improvements; adjoining sites as viewed from the Subject Property; and, the surrounding area based on visual observations made during the trip to and from the Subject Property as described below.

METHODOLOGY AND LIMITING CONDITIONS		
Subject Property Areas	**Methodology**	**Notes**
Exterior	ATC observed the exterior conditions, improvements and operations of the Subject Property from safely accessible common areas, roads and/or from the understood perimeter boundaries. Significant exterior features were observed when safely accessible.	No limiting conditions
Adjoining Properties	ATC observed properties adjoining the Subject Property from safely accessible adjacent public roads and/or along the understood Subject Property perimeter boundaries.	No limiting conditions
Interior Common Areas	ATC observed safely accessible interior common areas such as general storage, maintenance areas, mechanical equipment rooms, utility/janitorial rooms or closets, lobbies, hallways and recreation areas.	No limiting conditions
Interior Tenant Areas	ATC observed representative interior spaces	No limiting conditions
Other Interior Areas with Hazardous Substances and/or Petroleum Products	ATC observed other safely accessible areas known or suspected to be associated with the use, storage or disposal of hazardous substances and/or petroleum products	No limiting conditions

6.2 Site Reconnaissance Summary

The following is a summary of visual and/or physical observations of the Subject Property and adjoining properties on the day of the site visit. Conditions, features or operations observed, likely present or identified from interviews, records review or prior reports will be discussed further below the table, if applicable. Photographs can be found in Appendix C.

Condition, Feature or Operation Observed or Identified?	Yes	No
Hazardous Substances	X	
Underground Storage Tanks (USTs)	X	
Aboveground Storage Tanks (ASTs)		X
Other Petroleum Products	X	
Railroad Spurs		X
Pipeline Markers		X
PCB Containing Electrical Equipment	X	
Hydraulic Equipment	X	
Unidentified Substance Containers		X

Condition, Feature or Operation Observed or Identified?	Yes	No
Nonhazardous Solid Waste	X	
Wastewater	X	
Waste Pits, Ponds and Lagoons		X
Drains	X	
Sumps/Ejectors	X	
Septic Systems		X
Stormwater Management Systems	X	
Wells		X

6.2.1 Hazardous Substances

ATC did not observe the use or storage of hazardous substances or petroleum products on the Subject Property with the exception of small quantities (less than five gallons) of commercial cleaning and maintenance products that were properly stored in original containers. ATC observed paints, glues, caulking and janitorial supplies in the maintenance storage areas and the mechanical spaces.

Based on the observed conditions and the limited nature of the hazardous substances at the Subject Property, ATC concludes that the use, storage, and disposal of hazardous substances on the Subject Property does not represent a REC.

6.2.2 Underground Storage Tanks (USTs)

ATC observed evidence of USTs on the Subject Property as summarized below.

UST SUMMARY TABLE							
Location	Year Installed	Construction Materials	Contents	Capacity (gals.)	Use Status	Registration	Leak Detection & Prevention
Dupont	2010	Steel	No. 2 fuel oil	5,000	Active	Yes	Yes
Dupont	1955	Steel	No. 2 fuel oil	5,000	Replaced 2010	Yes	Unknown
Hamel	2010	Steel	No. 2 fuel oil	5,000	Active	Yes	Yes
Hamel	1950	Steel	No. 2 fuel oil	5,000	Replaced 2010	Yes	Unknown
Linnehan	1938	Iron	No. 2 fuel oil	5,000	Removed 1998	Yes	Unknown
Purtill	~1950	Steel	No. 2 fuel oil	5,000	Removed 2010	Yes	Unknown

As discussed in Section 5.3, three USTs were removed from the Subject Property in 2010 with no visual, olfactory, or PID evidence of contamination identified (Dupont, Hamel, and Purtill USTs). All three tanks were observed to be in good condition at the time of removal. Two of the tanks were replaced in 2010 and were observed during the site reconnaissance (Hamel/Purtill and Dupont USTs). Both active tanks are in use and have continuous monitoring equipment.

The two active USTs are not considered a REC based on the reported use of continuous monitoring to detect releases and observed conditions at the time of the site reconnaissance.

The former Linnehan Hall UST was reportedly removed in 1998, ATC requested closure documentation from the VT DEC's UST Management Division.

Closure documentation was provided, the tank was reportedly in good condition at the time of removal, with no visual, olfactory, or PID evidence of contamination in soils surrounding the UST. However, current UST closure standards require laboratory analysis of soils from the tank grave. Therefore, the

Linnehan UST closure is considered a BER and a data gap due to insufficient analysis and documentation of COCs in site soils under current site closure standards.

6.2.3 Polychlorinated Biphenyls (PCBs) Containing Electrical Equipment

ATC observed evidence of the use, storage, or disposal of common sources of PCB-containing electrical or equipment in, on or at the Subject Property as summarized below.

Fluorescent light ballasts were identified in fixtures throughout the Subject Property building. No evidence of leaking or staining around the outside of the light fixtures was observed by ATC. Fluorescent light ballasts manufactured prior to 1979 may contain PCBs. Based on the construction date of the Subject Property building (1903-1910), it is possible that on-site fluorescent light ballasts contain PCBs. All light ballasts should be inspected in-house for PCB-content labeling during routine servicing and replacement, and ballasts that are either labeled as PCB-containing or units that are unlabeled should be disposed of properly in accordance with applicable regulations.

6.2.4 Hydraulic Equipment

ATC observed hydraulic equipment on the Subject Property as summarized below.

HYDRAULIC EQUIPMENT			
Equipment Type	**Location**	**Fluid Base**	**Condition of Equipment & Area**
Elevator equipment	Linnehan Hall	Unknown; likely petroleum-based	Unknown; inaccessible. No odors observed during site reconnaissance, but no visual access.

ATC observed a blocked utility elevator shaft in Linnehan Hall. The elevator was reportedly taken out of service and the shaft was blocked in the 1980's. However, the elevator has reportedly not been decommissioned and hydraulic fluid may still be present in the mechanical components. The presence of the elevator is considered a REC based on the potential release of petroleum-based hydraulic fluid to the subsurface at the Subject Property. Additionally, the elevator hydraulic fluid is a BER due to the cost of removal of the elevator infrastructure and environmental testing.

6.2.5 Nonhazardous Solid Waste

All Subject Property buildings were unoccupied at the time of the site reconnaissance, however municipal solid was formerly generated at the Subject Property by residential and commercial tenants, and was reportedly picked up on a weekly basis.

The presence of the identified non-hazardous solid waste source does not represent a REC based on the observed conditions (no signs of a release, staining, or illegal dumping) and reported contents.

6.2.6 Wastewater

Wastewater generated at the Subject Property is limited to commercial sanitary sewer discharges from kitchen facilities, showers, toilets, and sinks, with no apparent environmental concerns noted. Municipal sanitary sewer connections are provided by the Town of Colchester.

6.2.7 Drains

ATC observed drains at the Subject Property as summarized below.

DRAINS AND SUMPS SUMMARY TABLE					
Drain Type	**Location**	**Contents**	**Use Status**	**Discharges To or Disposal Method**	**Condition of Drain & Area**

Drain Type	Location	Contents	Use Status	Discharges To or Disposal Method	Condition of Drain & Area
Floor drains	Bathrooms	Commercial sanitary wastewater	Active	Municipal wastewater system	Good

6.2.8 Sumps/Ejectors

ATC observed sumps at the Subject Property. All four Subject Property building mechanical spaces have a sump located in the recessed boiler basin or adjacent to the boiler in order to capture released fuel oil or condensate in the event of a leak. Hamel and Purtill Hall both have a sump pump connected to the wastewater line, which discharges to the municipal wastewater system. Dupont and Linnehan Hall do not have a sump pump connected. All sumps were dry at the time of the site reconnaissance and appeared to be in good condition with no cracks or odors.

Based on the reported discharge of Hamel and Purtill sumps to the municipal system, observed conditions, and boiler replacement, the Hamel and Purtill sumps are not considered a REC. The Linnehan and Dupont sumps are not serviced by a discharge system and represent a REC based on the potential release and migration of petroleum-related COCs to the subsurface.

6.2.9 Stormwater Management System

ATC did not observe any evidence of surface water, surface impoundments, retention ponds, dry wells, or other stormwater management systems at the Subject Property. Stormwater which gathers on the Subject Property is directed to the parking lots, vacant parcels of land, and landscaped areas surrounding the Subject Property. The stormwater either infiltrates the ground or flows over land to storm water catch basins that are connected to the municipal stormwater management system located along the street curbs.

7.0 SUBSURFACE VAPOR MIGRATION

ATC conducted a Tier 1 vapor encroachment screen (VES) in accordance with ASTM E2600-15 *Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions* for potential vapor encroachment conditions (VECs). A VEC is the presence or likely presence of chemicals of concern (COC) vapors in the vadose zone of the Subject Property caused by the release of vapors from contaminated soil and/or groundwater either on or near the Subject Property. A Tier 2 Non-Invasive Data Collection Screen was performed if prior assessment reports or regulatory documents were readily available.

ATC considered the nature and extent of on-site and nearby sources of potential subsurface vapor migration by evaluating the current and historical usage of the Subject Property, the construction type and history, the physical setting, and the potential sources of subsurface vapor migration through the review of regulatory agency database information and/or prior reports to identify contaminated properties.

COC include volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), volatile inorganic analytes and petroleum hydrocarbons, in most circumstances. Certain metals and radionuclides can represent VECs based on the known volatility of the constituents, but are uncommon. The vadose zone is the zone between the land surface and the water table within which moisture content is less than saturation (except in the capillary fringe) and pressure is less than atmospheric. Conditions may exist where there could be no vadose zone, such as the case of a building foundation sitting below the water table. In this case, it may be possible for COC vapors to adversely impact the indoor air without migrating through a vadose zone.

The default area of concern (AOC) is the approximate minimum search distance measured from the Subject Property boundary to a contaminated property with known or suspected COC contamination of soil and/or groundwater. If COC and/or petroleum hydrocarbon COC are used or stored on the Subject Property, or there is an institutional control recorded on the Subject Property for these COC, then the Subject Property is included in the default AOC.

The default AOC was adjusted accordingly based on review of groundwater flow direction, subsurface characteristics, surficial features, man-made features, known release information, and local knowledge. When groundwater flow direction can be estimated or determined, the crossgradient or downgradient radius distances can be significantly reduced.

The adjusted AOC are defined as the following distances from the Subject Property boundary:

Tier 1 Screening	Petroleum COC AOC Distance (LNAPL)	Petroleum COC AOC Distance (Non-LNAPL)	Non-Petroleum COC AOC Distance
Up-Gradient	528 feet	528 feet	1,760 feet
Cross-Gradient	165 feet	95 feet	365 feet
Down-Gradient	100 feet	30 feet	100 feet

When data on soil, groundwater, or soil gas contamination on properties within the AOC was available through on-line regulatory documents, (or at the regulatory agency office) a Tier 2 Screening was performed by evaluating whether contamination from these contaminated properties within the adjusted AOC falls within the critical distance of the Subject Property. The critical distance (CD) represents an estimate of the linear distance COC vapors volatilized from contaminated groundwater and/or soil might migrate in the vadose zone to the Subject Property based on industry protocols and available local records. The CD is the linear distance in any direction between the nearest edge of a contaminated plume and the nearest Subject Property boundary.

The Tier 2 CD is defined as the following distances from the Subject Property boundary.

Tier 2 Screening CD	Petroleum COC AOC Distance (LNAPL)	Petroleum COC AOC Distance (Non-LNAPL)	Non-Petroleum COC AOC Distance
Up-Gradient	100 feet	30 feet	100 feet
Cross-Gradient	100 feet	30 feet	100 feet
Down-Gradient	100 feet	30 feet	100 feet

ATC reviewed potential sources of COC from current and historical Subject Property operations, and known or suspected releases in the surrounding area, using Tier 1 and, if warranted, Tier 2 approaches.

As discussed in Section 5.3, vapor-phase COCs were identified above current vapor intrusion standards in the Vermont PBS building located at 204 Ethan Allen Drive, which is adjacent to the Subject Property boundary and approximately 170 feet south of Linnehan Hall and 160 feet east of Dupont Hall. The As of the issuance of this report, information regarding the current soil and groundwater conditions was not readily available for ATC to review. Based on the inferred hydrologic up/crossgradient location of this release relative to the Subject Property buildings, and the exceedance of residential vapor intrusion standards for indoor air and sub-slab soil gas, a VEC exists.

8.0 INTERVIEWS

The following persons were interviewed to obtain information regarding environmental conditions in connection with the Subject Property. Pertinent information from the interviews is discussed in applicable sections of this report.

INTERVIEW SUMMARY					
Role	**Name**	**Title/Company**	**Type**	**# Attempts**	**Response?**
Client (User)	Matt Moore	Representative, Evernorth	In Person	1	Yes
Local Fire Dept.	Eric Haversang	Chief, Saint Michael's Fire Unit	Telephone	1	No
Local Health Dept.	Denise Johnson-Terk	Health Officer, Town of Colchester	Telephone	1	No
Local Assessor's Office.	Representative	Town of Colchester Assessor	In person, telephone	2	Yes
Electrical Utility	Representative	Green Mountain Power	Telephone	1	Yes
Water Utility	Shelley	Representative, Town of Essex Public Works Department	Telephone	1	Yes

9.0 ADDITIONAL SERVICES

The following additional services beyond the scope of ASTM E1527-13 were included in the scope of work for this ESA and are discussed further below.

9.1 Wetlands Document Review

ATC reviewed the United States Fish & Wildlife Service (USFWS) National Wetlands Inventory (NWI) Wetlands Online Mapper website for documented wetlands at the Subject Property. There are no wetlands depicted on the Subject Property. A copy of the National Wetlands Inventory map is included in Appendix L.

9.2 Flood Plain Document Review

ATC reviewed the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for Colchester, Vermont, Community-Panel Number 50007C0144D, dated July 18, 2011. The Subject Property is located in Zone X, which is defined as areas determined to be outside the 500-year flood zone. A copy of the flood plain map is included in Appendix L.

10.0 REFERENCES

ASTM International, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*, ASTM Designation E1527-13. November 2013.

ASTM International, *Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions*, ASTM Designation E2600-15. December 2015.

EDR, *Certified Sanborn Map Report*, Dupont, Hamel, Linnehan, and Purtill Halls, 33, 84, 123, and 224 Ethan Allen Avenue, Colchester, Vermont, Inquiry Number 6255585.7, dated November 5, 2020.

EDR, *EDR- Historical Topo Map Report,* Dupont, Hamel, Linnehan, and Purtill Halls, 33, 84, 123, and 224 Ethan Allen Avenue, Colchester, Vermont, 6255585.4, dated November 5, 2020.

EDR, *The EDR Aerial Photo Decade Package,* Dupont, Hamel, Linnehan, and Purtill Halls, 33, 84, 123, and 224 Ethan Allen Avenue, Colchester, Vermont, Inquiry Number 6255585.3, dated November 5, 2020.

EDR, *The EDR-City Directory Image Report*, Dupont, Hamel, Linnehan, and Purtill Halls, 33, 84, 123, and 224 Ethan Allen Avenue, Colchester, Vermont, Inquiry Number 6255585.5, dated November 5, 2020.

EDR, *The EDR Radius Map with Geocheck*, Dupont, Hamel, Linnehan, and Purtill Halls, 33, 84, 123, and 224 Ethan Allen Avenue, Colchester, Vermont, Inquiry Number 6255585.2s, dated November 5, 2020..

EDR, *The EDR-Environmental Lien and AUL Search*, Dupont, Hamel, Linnehan, and Purtill Halls, 33, 84, 123, and 224 Ethan Allen Avenue, Colchester, Vermont, Inquiry Number 6255585.11, dated November 5, 2020.

EDR, *The EDR-Building Permit Report*, Dupont, Hamel, Linnehan, and Purtill Halls, 33, 84, 123, and 224 Ethan Allen Avenue, Colchester, Vermont, Inquiry Number 6255585.12, dated November 5, 2020.

Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), for CITY OR COUNTY NAME, Community-Panel Number 50007C0144D, dated July 18, 2011.

Google Earth, https://www.google.com/earth/.

Historic Aerials, https://www.historicaerials.com/viewer.

USDA. Natural Resources Conservation Service, Web Soil Survey, https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx.

USFWS, National Wetland Inventory Mapper, (http://www.fws.gov/nwi/).

Colchester Assessor's Office, https//:www.colchestervt.gov/assessor

11.0 TERMS & ACRONYMS

The following provides definitions and descriptions of key terms and acronyms that may be used in this report. Italics indicate terms that are defined by ASTM Standard Practice E1527-13. The Standard Practice should be referenced for further detail (such as the precise wording), related definitions or additional explanation regarding the meaning of terms.

recognized environmental condition(s) (REC) - the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment.

material threat - a physically observable or obvious threat which is reasonably likely to lead to a release that, in the opinion of the environmental professional (EP), is threatening and might result in impact to public health or the environment.

de minimis condition — is a condition that generally does not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of the appropriate governmental agencies. Conditions determined to be *de minimis* are not RECs nor *controlled recognized environmental conditions.*

historical recognized environmental condition (HREC) - a past release of any hazardous substances or petroleum products that has occurred in connection with the Subject Property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls). Before calling the past release an HREC, the EP must determine whether the past release is a REC at the time the assessment is conducted (for example, if there has been a change in the regulatory criteria). If the EP considers the past release to be a REC at the time the Phase I ESA is conducted, the condition will be reported as a REC.

controlled recognized environmental condition (CREC) - a REC resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitation, institutional controls, or engineering controls).

migrate/migration - refers to the movement of hazardous substances or petroleum products in any form, including, for example, solid and liquid at the surface or subsurface, and vapor in the subsurface.

business environmental risk (BER) - a risk which can have a material environmental or environmentally-driven impact on the business associated with the current or planned use of a parcel of commercial real estate, not necessarily limited to those environmental issues required to be investigated in this practice. Evaluation of business environmental risk issues may involve addressing one or more non-ASTM scope considerations.

Subject Property — a lot or assemblage of lots that comprise a parcel of commercial real estate as described in Section 1.1 that is the subject of this ESA report.