

Consulting
Engineers and
Scientists

Phase I Environmental Site Assessment
Baumgarten Property
123 Greenmanville Avenue
Mystic, Connecticut

Submitted to:

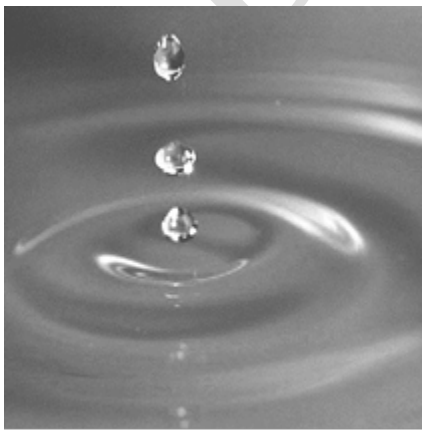
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Table of Contents

Abbreviations and Acronyms	iii
Executive Summary	1
1. Introduction	3
1.1 Purpose	3
1.2 Limitations and Exceptions	4
1.3 Data Gaps	4
1.4 Site Description	4
1.5 Site Ownership	5
1.6 Surrounding Land Use	6
2. Environmental Site Setting	7
2.1 Surface Soil	7
2.2 Bedrock Geology	7
2.3 Groundwater Depth and Flow Direction	7
2.4 Groundwater Classification	7
2.5 Surface Water	7
2.6 Water Supply Wells	8
2.7 Flood Classification	8
2.8 Potential Sensitive Receptors	8
3. User Provided Information	9
3.1 Title Records	9
3.2 Environmental Land Use Restriction (ELUR)	9
3.3 Specialized Knowledge	9
3.4 Commonly Known or Reasonably Ascertainable Information	9
3.5 Valuation Reduction for Environmental Issues	9
3.6 Owner, Site Manager, and Occupant Information	9
3.7 Reason for Performing ESA	9
4. Site History	10
5. Previous Environmental Investigations	13
5.1 Phase II Field Investigation, Atlantic Environmental, Inc. (November 1995)	13
5.2 Letter Report for Environmental Sampling, TRC (January, 2000)	14
5.3 Phase I Environmental Site Assessment, Paul Burgess LLC (July 2008)	14

6. Regulatory Review	16
6.1 Regulatory Review Sources	16
6.2 Site Findings	16
6.3 Off-Site Findings	17
6.4 Municipal Environmental Regulatory Review	17
7. Tier I Vapor Encroachment Screening	19
8. Site Reconnaissance	20
9. Transfer Act	23
10. Findings and Recommendations	24
10.1 Conclusions	24
10.2 Recommendations	25
11. Limitations	27
12. References	28

Figures

- 1 Site Location
- 2 Site Layout

Appendices

- Appendix A – Environmental Professional Declaration
- Appendix B – Electronic Database Search
- Appendix C – State and Local File Review
- Appendix D – Site Photographs

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Abbreviations and Acronyms

AOC	Area of Concern
ESA	Environmental Site Assessment
CT DEEP	Connecticut Department of Energy and Environmental Protection
EDR	Environmental Data Resources, Inc.
ELUR	Environmental Land Use Restriction
EPA	United States Environmental Protection Agency
ETPH	Extractable Total Petroleum Hydrocarbons
GB PMC	Pollutant Mobility Criteria
GWPC	Groundwater Protection Criteria
IC/DEC	Industrial Commerical Direct Exposure
IC/GWVC	Industrial Commerical Groundwater Volatilization Criteria
LUST	Leaking Underground Storage Tank
LNAPL	Light Non-Aqueous Phase Liquids
MDL	Method Detection Limit
MCC	Media Closure Criteria
MTBE	Methyl Tert Butyl Ether
NAPL	Non-aqueous Phase Liquids
NRH	National Register of Historic
PAH	Polycyclic Aromatic Hydrocarbon
PCBs	Polychlorinated Biphenyls
PCE	Tetrachloroethylene
PID	Photoionization Detector
PVC	Polyvinyl chloride
QAAP	Quality Assurance Procedure Plan
QA/QC	Quality Assurance/Quality Control
QC	Quality Control
RCRA	Resource Conservation Recovery Act
RCSA	Regulations of Connecticut State Agencies
RES DEC	Residential Direct Exposure Criteria
RES GWVC	Residential Groundwater Volatilization Criteira

Abbreviations and Acronyms (cont.)

RSRs	Remediation Standard Regulations
SPLP	Synthetic Precipitate Leaching Procedure
SWPC	Surface Water Protection Criteria
SVOC	Semi-Volatile Organic Compound
SWMU	Solid Waste Management Unit
TCA	Trichloroethane
TCE	Trichloroethylene
TSDF	Treatment, Storage, And/Or Disposal Facilities
USGS	United States Geological Survey
UST	Underground Storage Tank
VOC	Volatile Organic Compound
WWTS	Wastewater Treatment System

MEASUREMENTS

mg/cm ²	milligrams per square centimeter
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
ppb	parts per billion
ppm	parts per million
µg/L	micrograms per liter
µg/kg	microgram per kilogram

Executive Summary

GEI Consultants, Inc. has conducted a Phase I Environmental Site Assessment on behalf of the Trust for Public Land and Frederick Baumgarten (collectively referred to as the “Client”). The Site is approximately 1.5 acres of land, located in the Mystic Town of Stonington, Connecticut (Site).

The Site has a long history of residential and industrial activities dating back to the turn of the century. The Site was originally much smaller in size but was built up to extend into the Mystic River. The fill material used to enhance the property boundary was likely coal and slag from the adjacent Velvet Mill. Shortly after the change in boundary, a residential structure was built which has remained and been used for residential housing. A detached garage exists to the north of the residential building and the surrounding area has had various uses: coal storage, automobile storage, blacksmith shop, stonecutting, auto painting, and warehouse storage. The garage is currently used as a training facility for local crew and rowing teams. In addition, previous investigations have noted a tunnel traversing the Site from the Mill to the east and discharging to the Mystic River. This tunnel was not observed during the GEI reconnaissance.

The Phase I ESA identified two Areas of Concern (AOCs): 1) Site-wide fill and 2) Former Tunnel. These AOCs have been identified by previous investigations with testing of the soil and groundwater. The results of these investigations have indicated that releases have occurred from both AOCs with constituents of concern including petroleum, heavy metals, and polycyclic aromatic hydrocarbons (PAHs).

We do not recommend additional investigation or remediation for either of these identified AOCs. For AOC-1, additional investigation will likely not result in further delineation of impacts given the suspected widespread distribution of the fill materials. Instead, we recommend institutional controls are developed, such as a soil management plan, to address future intrusive activities at the Site. In addition, future Site redevelopment involving the construction of additional buildings and impervious features can be used to effectively render Site soils inaccessible and environmentally isolated.

For the second AOC, the extent of the former tunnel should be further defined. If the tunnel is still present, we recommend the contents of the tunnel are flushed and properly characterized and disposed. Once the contents of the tunnel is removed, we recommend capping both ends of the tunnel to prevent any additional discharges from occurring.

No additional AOCs, including historic AOCs or controlled AOCs, as defined by AST 1527-13, were evident of past, current or future potential releases of oil or hazardous materials at the Site. A Site reconnaissance was performed by Brian Conte of GEI on June 2, 2016. One above ground storage tank was identified during the Site review. The tank was located in the

basement of the residential structure and appeared to be in good condition with no releases noted. With the exception of slag and brick solid waste observed off Site along the Mystic River bank, no indications of staining or releases were observed during the Site reconnaissance.

One underground storage tank was identified for the Site but was removed in 2008. Review of the closure documentation indicated no release associated with the former tank and the removal was performed in accordance with state tank closure guidance. A former above-ground storage tank was reportedly located below the crawl space of the detached garage. The tank was not observed during the Site reconnaissance and no evidence of a release (i.e. staining or odors) were noted in the approximate former location.

Based on a review of town land records, no environmental records or liens were identified for the Site. There were no state or federal records for the Site. Several spills and leaking underground storage tanks were on file for the Mystic Seaport. The Seaport is downgradient of the Site and impacts to the groundwater or vapor intrusion are unlikely to impact the Site. No state or federal records were identified for the mill located to the east of the Site.

An ASTM Tier I Vapor Encroachment Screening was conducted. A 1998 petroleum release occurred at the Mystic Seaport was identified. The results of the screening included this off-Site release but did not qualify as an AOC.

No evidence was found indicating the Site meets the definition of an Establishment. Vehicle painting activities were documented at the Site but appear to have ceased prior to 1968, the activity date set forth in the Transfer Act regulations. The Establishment designation is a legal term and therefore should be rendered by a legal professional with specialized knowledge in Connecticut's environmental laws.

Finally, no significant data gaps were identified during this investigation. As such, this assessment was performed in conformance with the scope and limitations of ASTM Standard Practice E 1527-13.

1. Introduction

1.1 Purpose

The purpose of this report was to perform, on behalf of the Trust for Public Land and Fred Baumgarten, collectively referred to as “Client”, a Phase I Environmental Site Assessment (ESA) Report for one parcel, totaling approximately 1.5-acres of land known as Map 172, Block 1, Lot 1 located at 123 Greenmanville Avenue in Mystic, Town of Stonington, Connecticut (Site; Figure 1).

This Phase I ESA was conducted by GEI Consultants, Inc. in accordance with the requirements of the American Society for Testing and Materials (ASTM) Practice E1527-13. The Phase I ESA standard is designed to identify certain environmental conditions at the Site and adjacent properties:

- Identify Areas of Concern (AOCs), defined by ASTM as a condition with the potential for a past, current, or future release of oil or hazardous material (OHM) at the Site.
- Identify historic AOCs (HAOCs); defined by ASTM as a past release of OHM that has achieved regulatory closure without required controls or conditions.
- Identify controlled AOCs (CAOCs); defined by ASTM as a past release of OHM that has achieved regulatory closure with required controls or conditions.
- Evaluate the potential for a release of OHM at the Site.

An evaluation of business environmental risk associated with the parcel of land may necessitate investigation beyond that identified in this practice. Additional site investigations that may be required based on the findings and conclusions of the Phase I ESA have not been included with this report and require a separate scope of services.

The scope of services for the Phase I ESA included multiple tasks:

- Conduct a municipal, State of Connecticut Department of Energy and Environmental Protection (CT DEEP), and Environmental Protection Agency (EPA) database and regulatory file review of the property and relevant nearby properties.
- Review available previous environmental reports.
- Assess potential environmental receptors (i.e., groundwater, surface water, and water supplies).
- Describe the Site geology.
- Perform a Site reconnaissance to assess visible signs of potential environmental impairment.

- Summarize the findings relative to the potential presence of hazardous substances or petroleum products at the Site.
- Recommend additional investigations at the Site, if appropriate.

Appendix A of this report provides a signed declaration that this Phase I ESA was conducted under the supervision of an Environmental Professional, and that the Environmental Professional meets the professional qualifications set forth in ASTM-E 1527-13.

1.2 Limitations and Exceptions

The scope of services did not include the assessment of considerations not within the scope of the ASTM Phase I ESA standard, i.e., non-scope considerations. These include, but are not limited to Asbestos-Containing Materials, Radon, Lead-Based Paint, Lead in Drinking Water, Wetlands, Regulatory Compliance, Cultural and Historic Risks, Industrial Hygiene, Health and Safety, Ecological Resources, Endangered Species, Indoor Air Quality, Biological Agents, Mold, and High Voltage Power Lines.

1.3 Data Gaps

No data gaps were identified.

1.4 Site Description

The Site consists of a 1.5-acre parcel of land with two structures located at 123 Greenmanville Avenue in Mystic, Town of Stonington, Connecticut. The first structure is a two-story residential building with approximately 2,692 square foot gross living space). The residential building is currently vacant but available for rent. A large wooden deck enclosing an above-ground swimming pool is located on the western portion of the house. The second structure is a single-story detached garage with approximately 1,980 square feet of area (Stonington Property Card). The structure is currently used for a training and storage area for crew and rowing racing activities. Three crew boats were observed outside the garage during the Site reconnaissance. A crawl space is located below the detached garage. Both structures are located along the eastern portion of the Site adjacent to Greenmanville Avenue. The Site is fenced along Greenmanville Avenue with an unpaved road access from Greenmanville Avenue to the west of the house. A site schematic plan is provided as Figure 2.

To the west, the Site includes a grassed open space which gently decreases in elevation to the Mystic River. According to the parcel map, the Site includes the upland portions of the property up until a beached area which transitions to the Mystic River. The map also indicated a drainage easement along the southern Site and a Right-of-Way to the north.

Previous environmental investigations have noted a hole (approximately 12 inches in diameter) on the east central portion of the garage which extends to a tunnel under Greenmanville Avenue.

Various piping (presumed heating) were visible in the tunnel (Paul Burgess LLC, 2008). This hole was not observed during the Site reconnaissance performed by GEI on June 2, 2016.

Site Criteria	Site Information
Tax Map Block Identification	172/1/1
City Zoning	Residential, High Density (RH-10)
Location	Latitude: 41° 21' 52" Longitude- 71° 57' 48"
Property Size	Approximately 1.5 acres
Resource Conservation and Recovery Act (RCRA) Reporting Status	Does not currently report
Transfer Act Status	The Site does not appear to be an Establishment.
Previous Site Industrial Codes	NA
CT DEEP groundwater classification	GB
Nearest Surface Water Body	Mystic River comprises the western site boundary and is a SB classified river.
Expected overburden groundwater flow direction	West and southwest
Depth to groundwater	3 to 9 feet below grade
Site Drainage Basin	Mystic River
Utilities	Public water and sewer, and electricity

1.5 Site Ownership

A review of available land title records was conducted to determine previous site ownership to the extent practicable within the limits of this project scope. This review should not be considered a complete title search. Assessor's and Town Clerk records indicate the following property ownership summary.

- Frederick H. and George A. Baumgarten to Frederick H. Baumgarten, October 2015
- Mystic River Realty to Frederick H. and George A. Baumgarten, November 1988
- Harry W. Baumgarten to Mystic River Realty, November 1963
- John Rossie to Harry Baumgarten January 1963
- Mystic River Industrial Corp. to J Rossie Velvet Mills , February 1939

An electronic search of land records at the Stonington Town Clerk's office did not identify any CT DEEP or USEPA orders or liens recorded on the land records.

1.6 Surrounding Land Use

The surrounding land use is mixed commercial and residential along Greenmanville Avenue (Route 27):

- North: A small restaurant.
- Northeast: Across Greenmanville Avenue is a residential neighborhood.
- East: The former Rossie Velvet Mill (Rossie Mill), which was a textile mill. Further to the east are Mystic Little League ball fields.
- South: Seaman's Inn (Restaurant) associated with the Mystic Seaport located further to the south.
- West: The Mystic River.

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2. Environmental Site Setting

2.1 Surface Soil

According to the 1992 USGS Surficial Materials Map of Connecticut, the Site surface soil is sand and gravel overlying sand. Based on soil borings conducted on-Site by others, these natural deposits are overlain by 6-8 feet of fill including coal ash, cinders, and slag (Atlantic, 1995 and TRC, 2000).

2.2 Bedrock Geology

According to the 1985 *USGS Bedrock Geological Map of Connecticut*, bedrock geology underlying the site is listed as Mamacoke Formation, medium grained gneiss. Bedrock outcroppings were not observed during the Site reconnaissance.

2.3 Groundwater Depth and Flow Direction

The flow direction of groundwater is controlled mainly by topography. However, flow is also influenced by aquifer type, depth to bedrock, watercourses near the site, groundwater use, and subsurface structures. Generally, groundwater flows from topographic high points to low points. Based on the topography of the Site and vicinity, local groundwater flow is predicted to flow to the west/southwest toward the Mystic River. The 1995 Atlantic report indicated groundwater depth at approximately 9 feet below grade near the eastern extent of the Site and 4 feet towards the western portion of the Site and the Mystic River. It is likely that the groundwater is tidally-influenced by the proximity to the Mystic River and Long Island Sound.

2.4 Groundwater Classification

Groundwater below and near the Site is classified by the CT DEEP as a GB groundwater area. The GB classification indicates (1) groundwater within highly urbanized areas or areas of intense industrial activity; and (2) areas where public water supply service is available. The groundwater may not be suitable for direct human consumption because of waste discharges, spills or leaks of chemicals, or land-use effects. In addition, the groundwater below the Site and surrounding area is likely saline and therefore not suitable for consumption.

2.5 Surface Water

The nearest surface water to the Site is the Mystic River which directly abuts the Site to the west. This surface water is classified by the CT DEEP as SB, designating the waters for marine fish, shellfish, and wildlife habitats, recreation, industrial supply, and other legitimate uses, including navigation.

2.6 Water Supply Wells

The Site vicinity is supplied potable water by the Aquarion Water Company. Again, it is unlikely the groundwater at the Site and surrounding area is suitable for consumption given likely salt water intrusion from the tidally-influenced Mystic River. According to the CT DEEP Water Quality Classifications, Stonington, Connecticut Map, the Site is not located within an Aquifer Protection Area.

2.7 Flood Classification

The entire Site is located within Zone AE of the Federal Emergency Management Agency Flood Insurance Rate Map, Map Number 09011C0527, revised August 5, 2013. A “Zone AE” area is defined as an area inundated by 1% annual chance flooding, for which Base Flood Elevations have been determined (FEMA website, 2016). A copy of the map is provided in Appendix C.

2.8 Potential Sensitive Receptors

Several potential sensitive receptors were identified for the Site and surrounding area:

- The Site is currently used for training for local crew and rowing teams. As such, potential exposure exists to soils and sediments during these recreational activities. These exposures are consistent with the current residential zoning.
- The Mystic River is a potential sensitive receptor given its close proximity to the Site. Impacts from the Site to the River may also be transported to Long Island Sound located within ¼ mile downstream of the River.
- No residential or public supply wells were identified within the ½ mile of the Site. However, a more robust full well survey would be required to definitively identify well locations.
- No schools or day cares were identified within ½ mile of the Site.

3. User Provided Information

3.1 Title Records

A title search was not performed as part of this ESA.

3.2 Environmental Land Use Restriction (ELUR)

No information concerning environmental liens or activity use limitations was provided by the current property owner or Client to GEI for review as of the issuance of this Phase I ESA report. GEI reviewed a CT DEEP-maintained database, updated in August 2015, listing properties with ELURs. The Site was not listed. In addition, GEI did not observe records of environmental liens or activity or use limitations during this Phase I ESA.

3.3 Specialized Knowledge

No specialized knowledge or experience related to the Site was provided by the user of this ESA.

3.4 Commonly Known or Reasonably Ascertainable Information

The user of this ESA, Client, did not provide GEI with any commonly known or reasonably ascertainable information within the local community that is relevant to identifying AOCs at the Site.

3.5 Valuation Reduction for Environmental Issues

No information regarding the value of the Site or how the value of the property may be impacted by environmental conditions was provided by the current Site owner or user to GEI.

3.6 Owner, Site Manager, and Occupant Information

The Site owner, Mr. Fred Baumgarten, was contacted during the course of the investigation. The information provided by Mr. Baumgarten is provided throughout this report and consistent with the information provided during previous investigations. In addition, Ms. Gina Anton, caretaker for the Site, was interviewed on-Site during the June 2, 2016 Site reconnaissance. Information provided by Ms. Anton is also contained within the body of this report.

3.7 Reason for Performing ESA

GEI has completed this ESA, on behalf of the Client, as part of the due diligence for a potential real estate transaction.

4. Site History

The Site history presented below was based on available reports and review of historical maps and photographs. The purpose of reviewing the history of a site is to establish a timeline of ownership and operations for the property in order to inform the client of any potential hazardous environmental conditions on or around the site.

The Site history may be compiled from available atlas maps, United States Geological Survey (USGS) topographic maps, Sanborn Fire Insurance (Sanborn) maps, aerial photographs, city directories, property tax files, recorded land title records, and building department records. All sources may not be available or may not necessarily be reviewed to meet the stated goal.

Environmental Data Resources (EDR) of Milford, Connecticut conducted a search of available historical documents including topographic maps, Sanborn maps, and city directories. A copy of these records is provided in Appendix B.

The 2008 Phase 1 ESA completed by Paul Burgess LLC included an 1879 map of Mystic which was reviewed at the Connecticut State Library. A copy of the map is included in Appendix C and provides the earliest record of Site conditions. According to the map, the Site occupied a very thin strip of land along Greenmanville Avenue suggesting much of the current Site was built up in later years. An 1898 post card confirmed the lack of building structures on the Site and a much smaller Site boundary (Appendix C).

The 1903 Sanborn map depicts the Site with a smaller land mass than what exists currently, measuring out to around 80 feet from what was Greenmanville Ave to the Mystic River at its widest section. The Sanborn also shows a two-story dwelling with a basement in the location of the existing small house toward the southern end of the Site and a small shed to the north. The map indicates the two-story dwelling and shed were numbered 1417 and 1418 Greenmanville Avenue, respectively. It is important to note, that the Town of Stonington property card indicates the current house was built in 1945. It is likely that this date is incorrect and the house depicted in the Sanborn is the same building and was built around the turn of the century. To the east, across Greenmanville Avenue, an industrial building, labeled the Mystic Industrial Company occupied by the Rossi Velvet Company is depicted. The industrial building contains a similar footprint as present day.

The 1911 Sanborn map shows the shoreline had been extended into the Mystic River but is still reduced from the modern day configuration. An inlet, likely used for boat moorage, is shown with an associated dock and structure labels "boat box, no floor." The Sanborn also shows a coal house which had been constructed to the north along with a small automobile garage. The coal storage building appears to contain a roof but no indications as to the presence or existence

of a floor. A hose, likely used for fire suppression, is depicted to the north of the garage. The Sanborn Map also indicates the dwelling address is 73 Greenmanville Avenue.

By 1924, the Sanborn map depicts the shoreline more closely to present-day configuration. Note: the 1921 topographic map shows a slight variation of the shoreline and is not consistent with the 1924 Sanborn Map. The residential structure is still present, but the coal house from 1911 has been converted to a twelve-car garage with reported steam heating and electric lighting. There is also a detached structure housing a gasoline engine. The boat house, small garage, and channel seen in 1911 are no longer present, but a second building of similar size has been constructed perpendicular to the twelve-car garage in the west. This building is one-story but the use of the building is not indicated on the map. Both buildings are labeled as belonging to the Rossie Velvet Co. A 1934 aerial photograph confirms the existence of the two structures.

The 2008 Phase 1 ESA reported dark areas on aerial photographs from the 1930's to 1970's could be the result of coal storage on and around the Site. These dark areas are visible and could not conclusively be attributed to coal storage.

The 1939 Sanborn map does not contain the second building shown in the 1911 map. The gas engine and original twelve-car garage and dwelling remain. The twelve-car garage is still labeled as belonging to the Rossie Velvet Co.

The 1963 Sanborn has the previous car garage listed as an auto painting, with the labels for the steam heating and electric light removed. The gas engine and dwelling are still depicted, however, none of the buildings shown have a designated owner or operator. The mill building to the east is labeled General Dynamics, Electric Boat Company.

The Paul Burgess Phase I ESA included City Directories from 1957, 1960, and 1961, which were not provided by EDR. According to this report, these directories listed Charles Lamphere Co. (auto painters) during this time. The Connecticut Cabinet Corp. was also listed at the Site in the 1957 directory. The 1966 City Directory, provided in the EDR report and reviewed by GEI, indicated that 73 Greenmanville Avenue, believed to be the former address of the dwelling, was occupied by Charles Corn, D.L. Puglisi, and Electric Boat div General Dynamics Warehouse. The records suggest that the dwelling remained residential and the garage was used for warehouse storage. This designation of occupancy remains in the 1971 and 1977 City Directories.

An aerial photograph from 1986 shows the southern dwelling and the garage to the north, however the gas engine does not appear on this photograph. The above-ground pool to the east of the dwelling appears in a 1990 aerial photograph. These three structures are the existing buildings that make up this site.

In the 1992 and 1995 directories the property is unlisted. The 2003 city directory cites Robert Baumgarten as the Site occupant. Other directory years reviewed (2013, 2008, and 1999), the property was listed with an “Occupant unknown”.

The 2008 Phase 1 ESA completed by Paul Burgess LLC interviewed a Mr. Frederick Hermes was interviewed to provide an oral history of the site. Mr. Hermes was a long time worker at the Rossie Mill in Mystic Seaport. Mr. Hermes reported coal was brought and stored onsite from schooners and barges to supply the boiler at the Rossie Mill. The coal was transported to the boiler via an electric battery operated cart through an underground tunnel from the shore property to the mainland mill. According to Mr. Hermes, the on-site garage was used for mill vehicle storage. He also reported dye wastes were produced on site and discharged into the Mystic River, however, the discharge location was not reported.

The Site and surrounding neighborhood are included in the National Register of Historic (NRH) places. The 2007 application for the registration is provided in Appendix C. The NRH lists both the dwelling, referred to as the Lovelace home (123a), and built around 1900. The garage is listed as built in 1898 as a warehouse (123b). The description indicated it was used as a former blacksmith shop for the Rossie Mill and was transitioned into a stonecutter’s workshop (occupied by Bortolo Panciera) by the 1930s.

5. Previous Environmental Investigations

The following three previous environmental investigations were reviewed to assess the environmental investigation performed at the Site. The review of these documents assisted in the formation of the Conceptual Site Model presented in Table 1.

5.1 Phase II Field Investigation, Atlantic Environmental, Inc. (November 1995)

The Phase II Field Investigation was based on conclusions and recommendations contained in a March 1995 Phase I ESA prepared by Catalyst Environmental Consulting, Inc. The Phase I ESA was not reviewed by GEI. The Atlantic investigation included the advancement of ten borings at depths ranging from 3 to 12 feet below grade. Six soil samples were collected from five borings. Two of the borings were advanced to the water table where temporary groundwater samples were collected. The sampling was performed to address several areas of concern identified in the Catalyst Phase I ESA:

- Impacts related to former above-ground storage tank (AST) located along the southwestern corner of the garage.
- Potential underground storage tank (UST) potentially located along northwestern corner of garage and west of former gas engine house.
- Fill materials throughout the Site.
- Underground tunnel.
- Upgradient potential off-site sources of contamination.

The results of the soil sampling indicated semi-volatile organics and petroleum impacts associated with the fill material. Trichlorethane, a common degreasing solvent, was detected in a shallow soil sample collected on the western edge of the Site near the Mystic River. Relatively low levels of metals were detected in most of the soil samples which included arsenic, barium, chromium, lead, and mercury.

Of note, the report recommended that an underground tunnel, travels from the former Rossi Velvet Mill, is apparently discharging an unknown petroleum product/waste through the Site. The report also recommends that the tunnel should be properly closed out (sealed with cement) to prevent future discharges to the Site.

5.2 Letter Report for Environmental Sampling, TRC (January, 2000)

The executive summary in the letter report is excerpted as follows:

Presented below is a summary of the findings and recommendations:

- Trace concentrations of volatile organic compounds (VOCs), those typically associated with paints and degreasers, were identified in soil and groundwater at the Site at concentrations below the reference criteria. The source of the VOCs is not known.
- A groundwater sample collected from a location presumed to downgradient of the UST indicated the presence of petroleum hydrocarbons. This finding suggests that soils in the vicinity of the tank may also be impacted with petroleum.
- Near-surface soils to the west of the garage were found to be impacted with petroleum hydrocarbons at a concentration above the reference criteria. The source, whether localized spillage or emanating from the garage or other source, is not known. The high petroleum hydrocarbon concentration was detected in only one sample, so the extent of the impacts is not known.
- Fill samples at several locations contained polycyclic aromatic hydrocarbons (PAHs), possibly as a result of cinders or coal in the fill. PAHs are also present in asphalt. Exposure to the PAHs in the fill can be prevented by covering with clean soils.
- Arsenic, previously identified in a soil sample from the river bank, was not found to be present at high concentrations in any of the tested samples.
- Other than downgradient of the UST, significant impacts to groundwater was not noted.

Recommendations include:

- Additional soil testing to delineate the extent and source of petroleum hydrocarbons to soils west of the garage. Testing for the possible presence of PCBs in selected samples is underway, since the source of the petroleum is unknown.
- Removal of the UST and associated petroleum-impacted soils, if present.
- Additional groundwater testing near and downgradient of the petroleum tank.
- Consider some covering of the Site soils with clean fill as part of the development plan to assure no contact with the PAHs in existing fill once the site is developed.

5.3 Phase I Environmental Site Assessment, Paul Burgess LLC (July 2008)

The Phase I ESA provided a review of historical Site Use, records search, and review of previous Site investigations. Of particular significance, the report documented the removal of a 500-gallon UST on June 18, 2008. The fuel lines and tank were removed with no apparent releases to the environment. In addition, the report presents an independent evaluation of the chemical data developed during the previous site investigations.

The following conclusions were provided in the report:

- The 500-gallon gasoline UST was removed and no evidence of contamination above CT DEEP standards was detected.
- The tank in the crawl space has been removed. It appears this tank was associated with the steam heating system rather than dye waste as previously reported by others. Catalyst collected a soil sample from the areas near the tank and it contained total petroleum hydrocarbons above CTDEP standards. The soil was resampled by Paul Burgess, LLC and total petroleum hydrocarbons were not detected.
- The area near soil boring B-6 should be further investigated to determine the extent of contamination and then remediate this area.

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6. Regulatory Review

6.1 Regulatory Review Sources

Records review consisted of review of the following four sources:

- EDR conducted a search of available federal and state databases for sites within approximately 1 mile of the Site. EDR provided a report which met the requirements of the ASTM *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (E 1527-13)*. EDR's report includes both standard and additional federal and state environmental sources for at least the minimum search distances required by E 1527-13. A copy of the EDR report, dated June 1, 2016, is provided in Appendix B.
- The United States Environmental Protection Agency Envirofacts website was also reviewed on May 31, 2016. The scope of the review was limited to federal records maintained of the Site and four adjacent properties:
 - Mystic Seaport
 - Seaman's Inn
 - Rossie Velvet Mill
 - Kitchen Little
- File review at the CT DEEP on June 3, 2016. Files were requested for the following property addresses:
 - Mystic Seaport and Museum, 35 Greenmanville and 75 Greenmanville, respectively, Mystic, Connecticut
 - Seaman's Inn, 105 Greenmanville Ave, Mystic, Connecticut
 - Rossie Velvet Mill, 112 Greenmanville Avenue, Mystic, Connecticut
 - Kitchen Little, 36 Quarry Road, Mystic, Connecticut
- Review of previous environmental reports (See Section 5).

6.2 Site Findings

No spill reports or other potential recognized environmental conditions were identified within the site property boundary during the environmental data search.

6.3 Off-Site Findings

The environmental data search conducted by EDR identified two off-Site AOCs that may impact the environmental conditions at the site. The locations are listed below.

- Mystic Seaport and Museum, 75 Greenmanville Avenue, Mystic, Connecticut
- Mystic Seaport, 35 Greenmanville Avenue, Mystic, Connecticut

The Mystic Seaport and Museum, located at 75 Greenmanville Avenue, was reported as being a Contaminated or Potentially Contaminated Site (CPCS) due to a known UST which leaked. The incident was recorded in the Leaked Underground Storage Tank (LUST) database (case ID 31604) as occurring on November 5th, 1998. The leak resulted in the release of <2,100 gallons of commercial heating fuel. The LUST was marked as completed in the CPCS report (EDR ID S105457903). The Mystic Seaport and Museum also had three USTs that have since been permanently closed.

- Tank R1 contained 1,000 gallons of gasoline and was active from January 1st, 1950 until April 1st, 1998 when it was removed from the ground.
- Tank S1 contained 5,000 gallons of gasoline and was active from January 1st, 1950 to April 1st, 1998 when it was removed from the ground.
- Tank UL1 contained 1,000 gallons of gasoline and was active from July 1st, 1983 until December 1st, 1997 when it was removed from the ground.

The Museum also had a several reported spills. On May 19th, 2005 of 2 gallons of antifreeze (case # 200503078). They had a one gallone spill of antifreeze on August 9th, 1995 (case # 4576).

The Mystic Seaport, located at 35 Greenmanville Ave, was reported as being a CPCS due to LUST. The LUST report that coresponds to this properties CPCS status (case ID 31557) reports an unknown quantiy spill of commercial heating fuel on September 16th, 1998. The LUST was marked as completed in the CPCS report (EDR ID S105457880).

Despite the current or former industrial activities at these facilities and subsequent environmental investigations, these facilities were considered downgradient of the Site and therefore do not represent a potential off-Site AOC.

No off-Site releases were identified in close proximity to the Site that would warrant identification as a potential off-Site AOC.

6.4 Municipal Environmental Regulatory Review

File located at the Town of Stonington Building and Assesors Department were viewed on June 2, 2016. The documents pertaining to the tank removal in June 11, 2008 represented the only

documents provided which are included in Appendix C. The Site property card and boundaries were also viewed from the Town website and provided in this appendix.

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7. Tier I Vapor Encroachment Screening

We reviewed the EDR Report for sites at or near the Site that could potentially create a vapor encroachment condition (VEC), defined as the presence or likely presence of contaminated vapors in the subsurface caused by a release of OHM. In accordance with the requirements of the ASTM Tier I Vapor Encroachment Screening (E2600-10), we reviewed properties with suspect sources of petroleum contamination within 0.100 mile of the Site and properties with suspect sources of non-petroleum contamination within 0.333 mile of the Site. A Vapor Encroachment Screening report is provided in Appendix B.

Only one finding, the Mystic Seaport and Museum, at 75 Greenmanville Avenue, was identified. The release of petroleum compounds, as discussed in Section 6.3, were documented and reportedly closed as described in Section 6 of this report. The release would have been downgradient of the Site and therefore unlikely to present a vapor encroachment risk for the Site.

Based on the above information, and information contained in Section 6, we do not consider this event qualifying as an AOC.

8. Site Reconnaissance

The objective of the Site reconnaissance was to inspect the Site and accessible areas of adjacent properties to determine the presence or potential of a release of hazardous substances or petroleum products in order to identify recognized environmental conditions.

8.1 Inspection Personnel

The Site was inspected on June 2, 2016 by Brian Conte, LEP, CHMM, of GEI. He was accompanied by Ms. Gina Anton, Site caretaker, during the inspection. Site photographs are provided in Appendix D.

8.2 Building Description and Observations

8.2.1 *Building Description*

A residential home and a detached garage structure exist on the Site. A swimming pool is located to the west of the home. The residential home is two stories with a basement. The garage is one-story wood framed structure with a concrete floor. The garage is currently being used as a training facility for area rowing and crew teams. The interior of the garage included various training equipment.

8.2.2 *Building Heating*

The residential home is heated by an oil-fired furnace located in the basement. The garage is not heated. The Sanborns suggest it was once heated by steam from the Rossie Mill.

8.2.3 *Observed Interior Stains or Corrosion*

No interior stains or corrosion was observed from either chemical, petroleum, or water were observed in either the residential home or detached garage.

8.2.4 *Observed Interior Drains or Sumps*

No interior drains or sumps were observed. The Phase I ESA conducted in 2008 indicated there was one floor drain observed in the center of the garage floor. The drain was inspected by Paul Burgess in 2008 and no oily residue was noted. The specific discharge location of the drain is unknown.

8.2.5 Wastewater Disposal

Town of Stonington records indicate the home was connected to sewer in 1973. A GIS map available at the Town hall confirms sewer service is available for the Site.

8.3 Site Description and Observation

8.3.1 Site Description

Assessor's records indicate that parcel is 1.5 acres. The Site is generally grassed and extends west to the Mystic River. Topography slopes gently down to the River. An unpaved driveway extends from Greenmanville Avenue behind the residential structure.

Previous investigations have noted the presence of a tunnel extending from the eastern Site (along Greenmanville Avenue) and discharging to Mystic River. This tunnel was not observed during the Site reconnaissance.

However, brick and rusted material were observed along the River bank (See Appendix D). Property maps indicate this area is not part of the Site but may provide evidence of materials used throughout the Site used to increase the upland portion of the Site.

8.3.2 Pits, Ponds, Lagoons, Odors, Stressed Vegetation

None observed.

8.3.3 Stained Soil or Pavement

There were no exterior stained soil areas apparent.

8.3.4 Solid Waste

There was no significant solid waste visible on the Site. Brick, wood, and concrete were observed along the Mystic River bank to the west of the Site. In addition, solid waste items, including plastic, wood, and concrete were observed in the crawl space below the garage (Appendix D).

8.4 Oil/Chemical Storage

8.4.1 Current

There was no oil or chemical storage observed at the site, other than routine household chemicals and paints.

8.4.2 Past Chemical Storage/Waste Generation

No hazardous waste manifests were identified for the Site. It appears that the Rossie Mill used the Site for coal storage and for disposal of coal ash and slag from the boiler. The garage was originally used for coal storage and then vehicle storage. Sanborns and City

Directories indicate that the garage was used for “auto painting” in the late 1950s and early 1960s.

8.5 On-Site Storage Tanks

8.5.1 *Underground Storage Tanks (UST)*

A map depicting an easement acquired from Mystic River Realty Corp. by State of Connecticut dated January 1980 shows a “filler pipe” south of the residential structure. This map is provided in Appendix C. It is unclear if this was an underground storage tank. Mr. Baumgarten stated he was not aware of an underground storage tank in this area.

A 500-gallon steel UST was removed from the site on June 18, 2008 by Kropp Environmental Contractors who was contracted by Mr. Baumgarten. It was located adjacent and north of the garage building below a former structure indicated on the Sanborns as “gasol eng.”

The fuel lines and tank were removed. The tank was rusted but did not appear to have any apparent holes. The ground below the tank had no petroleum odors. The tank was located below the previous structure and directly to the north and east of the tank grave were concrete foundation walls. Five soil samples were collected and analyzed for aromatic volatile organics, and total lead synthetic precipitation leachability procedure (SPLP) lead in accordance with CT DEEP tank closure requirements.

The two tank base samples were also analyzed for extractable total petroleum hydrocarbons. Two sidewall samples were collected where no concrete foundation walls existed and two base samples were collected. Also, one sample from below the gas lines was collected for chemical analysis. No Extractable Total Petroleum Hydrocarbons (ETPH), aromatic volatile organics or lead was present above CT DEEP standards. Low levels of aromatic VOCs were detected but at levels that would not suggest a significant release (Appendix C).

8.5.2 *Aboveground Tanks*

A 275-gallon fuel oil tank was noted on the basement floor level of the residential home; no evidence of a release was observed but the tank was in an enclosed portion of the basement. Previous investigations have noted a fuel oil tank in the crawl space below the garage (Atlantic, 1995). As indicated in the 2008 Phase I ESA, the tank had been removed. We confirmed the removal during the Site reconnaissance. No indications of staining or odors were encountered below the crawl space in the approximate location of the former tank.

8.6 Polychlorinated Biphenyls (PCBs)

There were no transformers or hydraulic equipment observed on site.

9. Transfer Act

The Transfer Act, Conn. General Statutes §22a-134 et seq., applies to the transfer of an “Establishment,” which the statute defines as any real property at which or any business operation from which:

- (A) on or after November 19, 1980, there was generated, except as the result of remediation of polluted soil, groundwater or sediment, more than one hundred kilograms of hazardous waste in any one month,
- (B) Hazardous waste generated at a different location was recycled, reclaimed, reused, stored, handled, treated, transported or disposed of,
- (C) The process of dry cleaning was conducted on or after May 1, 1967,
- (D) Furniture stripping was conducted on or after May 1, 1967, or
- (E) A vehicle body repair or painting facility was located on or after May 1, 1967.

No evidence was found indicating the Site meets any of these definitions. Automobile painting occurring in the garage was indicated in the 1961 Sanborn map. However, it appears the garage was used as a warehouse by the May 1, 1967 date indicated in the regulations. The Establishment designation is a legal term and therefore should be rendered by a legal professional with specialized knowledge in Connecticut’s environmental laws.

10. Findings and Recommendations

GEI has prepared this Phase I ESA at the request of the Client. This assessment was performed in conformance with the scope and limitations of ASTM Standard Practice E 1527-13.

10.1 Conclusions

The Site has a long history of Site uses dating back to the turn of the century. The Site was originally much smaller in size but was built up to extend into the Mystic River. The fill material used to enhance the property boundary was likely coal and slag from the adjacent Velvet Mill operations including the boilers. Shortly after the change in boundary, a residential structure was built which has been used for residential housing to this day. The area near the current detached garage has been used for coal storage, automobile storage, blacksmith shop, stonecutting, auto painting, and warehouse storage. The garage is currently used as a training facility for local crew and rowing teams. In addition, previous investigations have noted a tunnel traversing the Site from the Mill to the east and discharging to the Mystic River. This tunnel was not observed during the GEI reconnaissance.

The findings of this report were as follows:

- Two AOCs was identified as part of this investigation.
 - AOC No. 1 Site-wide fill: – Previous investigations have documented the presence of coal and wood ash fill located across the Site with an estimated depth of greater than 6 feet, and slag material along the shoreline. These materials were confirmed during GEI Site Reconnaissance. Previous soil sampling results have detected ETPH, PAHs, and several metals within the fill material, with a subset of locations where concentrations of PAHs and metals exceeded CT DEEP RSR criteria. The 2008 Phase I ESA includes a statistical evaluation of soil data as allowed under the RSRs as an alternative compliance measure.
 - AOC No. 2 Former Tunnel: Previous investigations have noted a tunnel traversing the Site and sampling indicated a release of petroleum-impacted wastewater attributed to the upgradient Mill. This tunnel was not observed during the Site reconnaissance and no additional records were available for review from the Town records review.
- No additional AOCs including historic AOCs or controlled AOCs, as defined by ASTM 1527-13, were evident of past, current or future potential releases of oil or hazardous materials at the Site.

- An ASTM Tier I Vapor Encroachment Screening was conducted. A 1998 petroleum release occurred at the Mystic Seaport was identified. The results of the screening included this off-Site release but did not qualify as an AOC.
- The one AST observed at the residential dwelling did not indicate past or present releases.
- The Site and surrounding neighborhood are included in the National Register of Historic places.
- Miscellaneous oil and petroleum products were observed in the residential dwelling consistent with residential uses.
- No drums or transformers were observed on the Site.
- No sumps, drywells, or hydraulic lifts are known to be at the Site.
- No staining or stressed vegetation was observed along the exterior of the property.
- No evidence was found indicating the Site meets the definition of an Establishment. Vehicle painting activities appear to have been performed at the Site but appear to have ceased prior to the activity date set forth in the Transfer Act regulations. The Establishment designation is a legal term and therefore should be rendered by a legal professional with specialized knowledge in Connecticut's environmental laws.

10.2 Recommendations

Based on review of the historical Site uses, we found no evidence the Site qualifies as an Establishment under the Connecticut Transfer Act. In addition, no spills or regulatory orders were identified for the Site. As such, the Site is not currently under any regulatory requirement for environmental investigation or remediation.

Nevertheless, environmental sampling has been performed at the Site. These data indicate the fill material used to increase the property size are impacted with constituents associated with coal and industrial waste (petroleum, PAHs, and heavy metals). It is likely these constituents are widely distributed throughout the Site at various concentrations. Further delineation of the presence of these constituents is likely to be inconclusive.

As such, we recommend Site-wide fill AOC-1 is addressed through institutional controls. Such institutional controls may include development of a soil management plan which specifies appropriate protective measures to take during any intrusive soil activities and future Site redevelopment.

It is our understanding that future redevelopment activities may occur which include the addition of buildings to the Site. The strategic placement of these buildings will render portions of the soils inaccessible and environmentally isolated. The previous investigational data can be used to target these optimal locations. In addition, the placement of impervious materials including asphalt can help render these soils as inaccessible.

To address AOC-2, the former tunnel, we recommend the location and condition of the former tunnel is fully defined. The location and extent of the former tunnel can be identified with the use of ground penetrating radar, if necessary. If the tunnel is still present, the contents of the tunnel should be flushed and properly characterized and disposed. Once the contents of the tunnel is removed, we recommend capping both ends of the tunnel to prevent any additional discharges from occurring.

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11. Limitations

This ESA was conducted and prepared on behalf of the Trust for Public Land and Mr. Frederick Baumgarten (collectively referred to as the “Client”) and its legal representation. No other entity may rely upon the results of the ESA or contents of this report for any reasons or purpose, whatsoever.

The purpose of this ESA is to evaluate whether hazardous substances or petroleum products may be present in the environment at the Site. The opinion that is provided is based on the information described in this report. No soil or groundwater samples were collected or chemically analyzed as part of this evaluation. Discussion of soil or groundwater quality is based on previous investigations not performed by GEI. Future investigations or information that was not available to GEI may result in modification of the findings of this report.

In preparing this report, GEI relied on file information provided by state and local officials, and information and representations made available to GEI at the time of the report. To the extent that such information is incomplete or inaccurate, GEI is not responsible.

GEI performed this ESA in accordance with generally accepted practices of engineers and/or scientists providing similar services at the same time, in the same locale, and under like circumstances. No other warranty, expressed or implied, is made as to the professional opinions included by GEI in this report.

Per Section 4.6 of ASTM E1527-13, an ESA meeting or exceeding the ASTM E 1527-13 standard and completed less than 180 days prior to date of acquisition of the property or (for transactions not including an acquisition) the date of the intended transaction is presumed to be valid.

12. References

2013. The American Society of Testing and Materials (ASTM) *Standards on Environmental Site Assessments for Commercial Real Estate* (E 1527-13), 2013.

1955. Aitken, Janet M. 1955, *The Bedrock Geology of the Stonington Quadrangle With Map*, State of Connecticut Geological and Natural History Survey and United States Geologic Survey.

1995. Atlantic Environmental Services, Inc., November 1995, *Phase II Field Investigation*.

2012. Connecticut Department of Energy and Environmental Protection, *Water Quality Classifications, Stonington, Connecticut*, August 2012.

1993. Connecticut Department of Environmental Protection Water Quality Classification Map of Thames River, Pawcatuck River, and Southeast Coastal Basins, Connecticut. February 1993.

2016. Environmental Data Resources, Inc., June 2, 2016. "The EDR Radius Map Report with GeoCheck[®]," Inquiry No. 3771271.2s, Stonington, Connecticut.

2008. Paul Burgess, LLC. Phase I Environmental Site Assessment, July 2008.

2016. Town of Stonington Tax Assessor's Office, Property cards.

2000. TRC., January 2000, Letter Report for Environmental Sampling.

Figures

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Appendix A

Environmental Professional Declaration

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Appendix B

Electronic Database Search

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Appendix C

State and Local File Review

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Appendix D

Site Photographs

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