



## PHASE I ENVIRONMENTAL SITE ASSESSMENT

### CONNECTICUT DEPARTMENT OF TRANSPORTATION

HIGGANUM REPAIR GARAGE  
11 CANDLEWOOD HILL ROAD  
HADDAM, CONNECTICUT

**JANUARY 2001**

SCIENTISTS  
ENGINEERS  
GIS SPECIALISTS

#### CONNECTICUT

7 ISLAND DOCK ROAD  
HADDAM CT 06438  
PHONE 860.345.4578  
FAX 860.345.3854  
TOLL FREE 1.800.524.9256

#### MASSACHUSETTS

600 CHARLTON STREET  
SOUTHBIDGE MA 01550  
PHONE 508.764.8755  
FAX 508.764.4054  
TOLL FREE 1.800.676.3707

LAKESIDE OFFICE PARK  
599 NORTH AVENUE SUITE 6-4  
WAKEFIELD MA 01880  
PHONE 781.246.8897  
FAX 781.246.8950  
TOLL FREE 1.800.344.1958

#### NEW HAMPSHIRE

514 SOUTH STREET  
BOW NH 03304  
PHONE 603.224.8871  
FAX 603.224.8688  
TOLL FREE 1.800.636.6030

#### VERMONT

73 MILLET STREET  
RICHMOND VT 05477  
PHONE 802.434.4500  
FAX 802.434.6076  
TOLL FREE 1.800.520.6065

#### Satellite Office:

#### NEW YORK

116 CONSUMER SQ., #174  
PLATTSBURGH NY 12901  
PHONE 518.566.8297  
TOLL FREE 1.800.520.6065

INTERNET:  
[WWW.MARINENV.COM](http://WWW.MARINENV.COM)

*Prepared for:*

**TOWN OF HADDAM**  
HADDAM, CONNECTICUT

*Prepared by:*

**MARIN ENVIRONMENTAL, INC.**  
HADDAM, CONNECTICUT

*Reference No: 99-0474*

## SIGNATURE OF REPORT AUTHORS

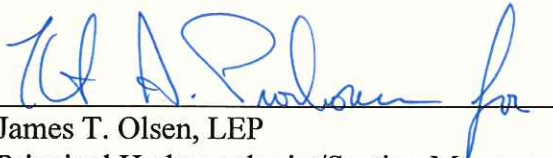
This report was prepared by the employees of Marin Environmental, Inc. (Marin) whose signatures appear below. Requests for information on the content of this document should be directed to these individuals.



---

Lee M. LeBlanc  
Environmental Scientist II

*Approved for Release by:*



---

James T. Olsen, LEP  
Principal Hydrogeologist/Section Manager

## **TABLE OF CONTENTS**

<b><u>Section</u></b>	<b><u>Page</u></b>
<b>EXECUTIVE SUMMARY</b>	
<b>1.0 INTRODUCTION.....</b>	<b>1</b>
1.1 Purpose of Study	
1.2 Property Location and Ownership	
1.3 Date of Study	
1.4 Scope of Work	
1.5 Summary of Previous Site Assessments	
<b>2.0 CURRENT SITE AND AREA CHARACTERISTICS.....</b>	<b>6</b>
2.1 Site Inspection	
2.2 Site Description and Operations	
2.3 Utilities	
2.4 Building Hazards	
2.5 Underground/Aboveground Storage Tanks	
2.6 Site Geology/Hydrogeology	
2.7 Site Reconnaissance	
2.8 Area Reconnaissance	
<b>3.0 SITE AND AREA HISTORY .....</b>	<b>26</b>
3.1 Historical Ownership	
3.2 Aerial Photograph Review	
3.3 Sanborn Maps Review	
<b>4.0 SITE REGULATORY INFORMATION.....</b>	<b>29</b>
4.1 Pertinent File Review/Research	
4.2 Results of Regulatory Review	
<b>5.0 AREA REGULATORY INFORMATION.....</b>	<b>35</b>
5.1 Pertinent File Review/Research	
5.2 Results of Regulatory Review	
5.3 Underground Storage Tanks/Oil & Chemical Spill Incidents	
<b>6.0 CONCLUSIONS AND RECOMMENDATIONS .....</b>	<b>43</b>
<b>7.0 REFERENCES.....</b>	<b>47</b>
<b>8.0 LIMITATIONS.....</b>	<b>49</b>

## **TABLE OF CONTENTS** (continued)

### **FIGURES**

Figure 1	Site Location Map
Figure 2	Site Plan

### **APPENDICES**

Appendix A	Site Photographs
Appendix B	Site Documentation
Appendix C	Sanborn Maps
Appendix D	VISTA StarView Report
Appendix E	Previous Environmental Site Investigations
Appendix F	Area Documentation
Appendix G	DOT Ground Water Sampling

## EXECUTIVE SUMMARY

Marin Environmental, Inc. (Marin) has completed a Phase I Environmental Site Assessment (ESA) of the Connecticut Department of Transportation Higganum Repair Garage located at 11 Candlewood Hill Road within the Village of Higganum, Town of Haddam, Connecticut. The subject site consists of approximately 4 acres.

The site consists of two, two-story brick buildings (Building 81-115 and Building 81-106), two wooden sheds, emergency generator shed, a vehicle and equipment compound area, asphalt paved parking areas, and gravel and grass covered areas. Reportedly, Building 81-115, which is located on the northern section of the subject site, was constructed in approximately 1887, and Building 81-106, which is located on the southern section of the subject site, was constructed in approximately 1838 and 1866. These buildings were once part of the D & H Scovil Hoe Company Mill No. 4 which operated from approximately 1844 to 1942. The site has since been utilized as a repair facility for the Connecticut Department of Transportation (CTDOT).

During the Phase I ESA, fourteen areas of concern (AOCs) were identified. These AOCs were identified based on known, documented releases to the environment or the potential for a release to the environment based on observed site conditions or historical information. The areas of concern are as follows:

AOC 1 - Suspect Filled Area (Former Spar Mill Pond)

AOC 2 - Floor Drains and Conveyance System

AOC 3 - Hydraulic Lift

AOC 4 - Former Solvent Storage Area

AOC 5 - Former Steam Cleaning Area

AOC 6 - Area of Historic Solvent Odor

AOC 7 - Utility Pit

AOC 8 - UST Area East of Building 81-106

AOC 9 - UST Area North of Building 81-106

AOC 10 - UST Area North of Building 81-115

AOC 11 - Former Central UST Area

AOC 12 - Former Forge Shop

AOC 13 - Septic Tank and Leach Field

AOC 14 - Area of Former Drum Storage

## 1.0 INTRODUCTION

### 1.1 *Purpose of Study*

The purpose of this Phase I Environmental Site Assessment (ESA) was to evaluate the likelihood of potential on-site environmental impacts due to spills or releases of oils and/or hazardous materials resulting from past and present site operations and/or land use activities, or from off-site activities. The purpose was also to identify other potential adverse environmental conditions associated with the subject property.

### 1.2 *Property Location and Ownership*

The subject site consists of approximately 4 acres of land located in a commercial area within the Village of Higganum, Town of Haddam, Connecticut. The site is located south of Candlewood Hill Road, near the intersection of Connecticut Routes 154 and 81. The property is bounded to the west by vacant land, to the south by Candlewood Hill Brook, to the north by Candlewood Hill Road, and to the east by the Haddam Volunteer Fire Department. According to the Town of Haddam's Tax Assessor's files, the parcel is referenced as Map 15/Lot 090. The property is currently owned by the Connecticut Department of Transportation. Refer to Figures 1 and 2 for the Site Location Map and Site Plan, respectively.

### 1.3 *Date of Study*

Authorization to proceed on this project was granted in June 2000 by the Town of Haddam and Connecticut Department of Transportation. The site inspection was performed on June 15, 2000. The Connecticut Department of Environmental Protection (CTDEP) file review was performed on April 19 and June 21, 2000. The Town of Haddam municipal research was performed on April 18 and June 15, 2000. This report is dated November 2000.

#### 1.4 *Scope of Work*

The following scope of work was performed in accordance with standard ASTM protocols and provides conclusions relative to the release of oils and/or hazardous materials on-site, the environmental liabilities associated with the site, and other adverse environmental conditions that may be present.

1. Town of Haddam Tax Assessor files were reviewed to determine the history of site ownership.
2. Historical aerial photographs for the subject site were reviewed for the years 1934, 1951, 1965, 1970, 1975, 1980, 1985, 1990 and 1995. Sanborn Fire Insurance Maps were reviewed for the years 1901, 1908 and 1914.
3. A VISTA StarView database search of State and Federal records was conducted in accordance with ASTM Standards.
4. Pertinent CTDEP records were reviewed for current and historical regulatory information concerning the subject site and nearby properties.
5. The Town of Haddam Tax Assessor's Office, Town Clerk's Office, and Land Use Department (Engineering Department, Planning and Zoning Department, Fire Marshal's Office, and Health Department) were contacted for information regarding site conditions and usage.
6. The site and surrounding area were visually inspected for indications of spills of oils or hazardous material, and other adverse environmental impacts that might affect the site.



7. Local officials and other knowledgeable persons were interviewed regarding on-site operations, land use, and historical incidents that may have had adverse environmental impacts.

The scope of work completed for this assessment did not include the sampling and chemical testing of soils, sediment, septic liquid or sludge, surface water, ground water, or polychlorinated biphenyls (PCBs) containing fluids.

### 1.5 *Summary of Previous Site Assessments*

Marin Environmental, Inc. (Marin) of Haddam, Connecticut, has reviewed a number of environmental reports regarding the study site. They are as follows:

A report titled *Draft Phase I Grab Sampling/Geophysical Report, ConnDOT Hazardous Waste Site Investigation Study (Pages II-142-II-148)* dated October 1985 was prepared by Fred C. Hart Associates, Inc. of Meriden Connecticut. This report summarized the results of a surface water grab sample and geophysical survey at the site. The surface water sample was collected from a downgradient location of Candlewood Hill Brook adjacent to the fill area. The report indicated that no surface water contamination was found to be present at this location. The report also detailed the results of a geophysical investigation, via metal detection survey, conducted at the site in May 1985. The survey was conducted in an area reportedly used for drum burial. The results of the survey indicated one high metal reading precisely in the area of the reported drum burial. Lastly, a steam cleaning area south of Building 81-106, a solvent odor northwest of Building 81-106, a solvent storage area within the vehicle and equipment compound area, and a drum storage area north of the wooden sheds were noted. The report stated that this site was one of 14 sites concurrently undergoing work plan preparation by Fred C. Hart Associates for the ConnDOT.

A report titled Field Investigation Work Plan for the Higganum Site #25, Higganum, Connecticut dated November 1985 was prepared by Fred C. Hart Associates, Inc. of Meriden, Connecticut. This plan details the investigation plan designed to determine the location and extent of any buried drums or tar-like substances at the site. The plan indicated that the findings of this investigation may indicate a need for additional investigative activities in order to further assess the environmental impact of past disposal practices at the Higganum site.

A report titled Preliminary Test Report, ConnDOT Salt Storage and Maintenance Facilities Study, Haddam (Candlewood Hill Road), Facility No. 36, District 2, Section 3 dated January 1986 was prepared by Metcalf and Eddy, Inc. of Meriden, Connecticut. This report summarized test information, test rationale and sampling schedule, and sampling results. Ground water, surface water, soil, and sediment samples were collected from six locations throughout the Higganum ConnDOT site. Benzene was detected at trace levels (1 ug/L) in one ground water sample sodium and chloride were detected in all three ground water samples collected. A detailed test was recommended to evaluate potential impacts to on-site and adjacent receptors from past releases at the site.

A report titled Detailed Test Report, ConnDOT Salt Storage and Maintenance Facilities Study, Haddam (Higganum) Facility No. 36, District 2, Section 3 dated March 3, 1987 was prepared by Metcalf and Eddy, Inc. of Meriden, Connecticut. This report evaluated the local environmental settings and environmental receptors, a detailed test rationale, hydrogeologic results, chemical data analysis, contaminant transport and fate analysis, and risk assessment in connection with the potential impacts from Higganum ConnDOT facility on area wide ground water within the village of Higganum. Based on previous investigations, the report recommended that an alternative potable water source (privated wells or community water system) be pursued in order to reduce the number of human receptors affected by impacted ground water. In addition, the report recommended that a holding tank be installed at the ConnDOT facility to collected floor drain discharge. At the time of Detailed Test Report, all floor drains discharged directly into Candlewood

Hill Brook, which was and still is in violation of state regulations. Several USTs were identified at the site, at the time of the Detailed Test Report, were identified as exceeding their life expectancy. The replacement of these tanks was recommended, therefore, bringing the Higganum ConnDOT facility into compliance with Connecticut State Regulations. Lastly, soil removal from the area of the floor drain discharge and the fill area was recommended.

A draft report titled Field Investigation Report For The Higganum Site #25, Higganum, Connecticut dated June 1987 was prepared by Fred C. Hart Associates, Inc. of Meriden, Connecticut. This report summarized the results of all field investigation activities conducted at the Higganum DOT site. The focus of the Hart investigation at the Higganum site was on a former disposal area located on the western one-third of the DOT property. Results of the investigation indicate that the four or five drums reportedly buried at the site were not present as indicated by a 1985 metal detection survey. However, two empty rusted drums were encountered in the fill area during subsurface investigations (test pit installation). In addition, the past burial of a tar-like substance in the fill area was considered the source of concentrations of base/neutral and acid extractable (BNA) compounds. Benzene was also detected in an upgradient monitoring well but was not believed to be attributable to past DOT waste disposal practices in the fill area. Hart recommended that the large mass of the tar-like substance buried at the site be removed and properly disposed of. Semi-annual ground water monitoring was also recommended subsequent to the removal of the tar-like substance.

A report titled Water Supply Feasibility Study, Businesses and Residences on Candlewood Hill Road, Haddam (Higganum), Connecticut dated May 1993 was prepared by Metcalf and Eddy, Inc. of Meriden, Connecticut. The purpose of the study was to identify and evaluate the alternative for potable water supply remediation and to recommend a remediation plan for the businesses and residences on Candlewood Hill Road. Several of the private wells adjacent to the Higganum CTDOT facility have been impacted by sodium and trichloroethylene (TCE). The source of the sodium

contamination was reported to likely have originated from the CTDOT facility while the TCE contamination was reported to not have originated from the facility. The feasibility study recommended that deep bedrock monitoring wells be installed at the CTDOT site to further investigate the source of TCE contamination, and the extent of the CTDOT's responsibility in this matter.

## **2.0 CURRENT SITE AND AREA CHARACTERISTICS**

The site inspection was performed on June 15, 2000 to view current site conditions and to observe, if any, visible evidence of adverse environmental conditions existed at that time. Limitations to the site inspection are reported in Section 8.0 of this report.

### **2.1 *Site Inspection***

The site was inspected by Lee LeBlanc, an Environmental Scientist I at Marin, on June 15, 2000. The site contact for this environmental site assessment was Mr. Manuel Diaz-Rivera, repair garage supervisor. Mr. Diaz-Rivera has worked at the Higganum repair garage for approximately four years. Mr. Diaz-Rivera had limited information regarding events which occurred at the subject site previous to the past four years. The site inspection included walking the approximate perimeter of the site, walking throughout the interior of the buildings, inspecting key site features, reviewing available chemical documentation and observing land use practices on the adjacent properties. Site photographs taken at the time of the site inspection along with historical aerial photographs are included in Appendix A.

### **2.2 *Site Description and Operations***

The site consists of two, two-story brick buildings (Building 81-115 and Building 81-106), two wooden sheds, emergency generator shed, a vehicle and equipment compound area, asphalt paved parking areas, and gravel and grass covered areas. Reportedly,

Building 81-115, which is located on the northern section of the subject site, was constructed in approximately 1887, and Building 81-106, which is located on the southern section of the subject site, was constructed in approximately 1838 and 1866. These buildings were once part of the D & H Scovil Hoe Company Mill No. 4 which operated from approximately 1844 to 1942. During these years, the D & H Scovil Company manufactured planters hoes and milled feldspar. From approximately 1942 to the present, the site has been utilized as a repair facility for the Connecticut Department of Transportation. Currently, both Buildings, 81-115 and 81-106, primarily consist of several garage bays, tool and hardware storage areas, supply storage areas, materials storage areas, welding area, two boiler rooms, and office space. According to historic Sanborn Fire Insurance Maps dated 1901, 1908 and 1914, the site consisted of two, two-story brick buildings and one, two-story wooden building identified as forge shops belonging to D & H Scovil's Lower Factory. A lumber shed, coal bin and a flume adjacent to Candlewood Hill Brook were also identified on the site. According to a Town of Haddam survey map dated April 1941, a pond identified as the Spar Mill Pond and associated wetlands were located on the western section of the subject site. A dam and spillway was identified at the eastern end of the Spar Mill Pond.

The elevation of the site ranges from approximately 90-100 feet above National Geodetic Vertical Datum (NGVD). The site topography slopes gently to the east. Site features are illustrated on Figure 2, the site plan.

Based on information reviewed to date, the site may not meet the definition of a Hazardous Waste Establishment and, therefore, would not be regulated under the Connecticut Transfer Act (C.G.S. 22a [a-d]) as revised by Public Act 97-128.

Additional details relating to site operations and historical regulatory documentation are included in Sections 2.7 and 4.0 of this report.

### 2.3 *Utilities*

The subject site utilizes an on-site potable water supply well, located on the western section of the subject site, for water and one septic tank, located on the eastern section of the subject site, for sewage. One fiberglass 2,000-gallon #2 heating oil UST, located adjacent to the exterior of the northeast corner of Building 81-115, is used to heat Building 81-115. One fiberglass 2,000-gallon #2 heating oil UST, located adjacent to the east of Building 81-106 and west of the vehicle and equipment compound area, is used to heat Building 81-106. Electricity is supplied to the subject site by Connecticut Light and Power (CL&P). No transformers were observed during the site inspection.

### 2.4 *Building Hazards*

Due to the apparent age of the on-site buildings, possible asbestos containing building materials (ACBMs) may be present in the buildings. ACBMs may be included in such materials as covered floor and ceiling tiles, pipe insulation, window caulking and asphalt roofing tiles.

Suspect asbestos containing pipe insulation was observed throughout Buildings 81-115 and 81-106. Labeled pipe insulation was observed throughout these buildings.

### 2.5 *Underground/Aboveground Storage Tanks*

According to Mr. Diaz-Rivera and CTDEP UST reports, five USTs are located throughout the subject site. One fiberglass 2,000-gallon #2 heating oil UST is located adjacent to the exterior of the northeast corner of Building 81-115. This tank, installed in March 1989, is used to heat Building 81-115. One fiberglass 2,000-gallon #2 heating oil UST, one fiberglass 4,000-gallon unleaded gasoline UST, and one fiberglass 4,000-gallon diesel UST are located centrally between Building 81-106 and the vehicle and equipment compound area. These tanks, installed in March 1989, are used to store fuel for the

heating of Building 81-106 and the fueling of on-site vehicles and equipment. Fuel dispensing pumps associated with the diesel and unleaded gasoline USTs are located centrally between Building 81-115 and 81-106. One steel 550-gallon waste oil UST is located adjacent to the northern exterior of Building 81-106. This tank, installed in March 1989, is used to store used oil. According to Mr. Diaz-Rivera, the 550-gallon waste oil tank is emptied approximately twice a year by United Oil Recovery, Inc. of Meriden, CT. According to the CTDEP UST reports and visual observations, these USTs all have some form of monitoring system (i.e., UST monitoring wells) associated with their operation. No unusual staining or odors were observed adjacent to these USTs.

One steel 100-gallon diesel AST was observed within the central bay area located in Building 81-115. This tank contains "low sulphur" diesel fuel and is used to fuel the on-site emergency generator located adjacent to the north of Building 81-115. Minimal staining was observed adjacent to the diesel AST.

One septic tank is located adjacent to the east of Building 81-115 beneath an asphalt paved parking area. This tank is currently in use. No unusual staining or odors were observed adjacent to the septic tank.

According to Mr. Diaz-Rivera and CTDEP UST reports, several USTs have been removed from the subject site. In March of 1989, one steel 3,000-gallon unleaded gasoline UST was removed from an area located adjacent to the current fuel dispensing pump. This UST was installed in approximately 1960. In March of 1989, two steel 2,000-gallon #2 heating oil USTs were removed from an area located east of Building 81-106 and north of Building 81-115. The #2 heating oil UST formerly located east of Building 81-106 was reportedly installed in approximately 1962. The heating oil UST formerly located north of Building 81-115 (adjacent to Building 81-115 office area) was reportedly installed in 1941. In March 1989, one steel 1,000-gallon waste oil UST was removed from an area north of Building 81-106. This tank was reported to have been installed in 1968. In March 1989, one steel 550-gallon diesel UST was removed from an

area located adjacent to the northeast corner of Building 81-106. This tank was reported to have been installed in approximately 1955. Additional information regarding the removal of these tanks was not found in the Town and State files.

Areas containing both former and present USTs may be considered areas of concern (AOCs).

## **2.6    *Site Geology/Hydrogeology***

According to the Surficial Materials Map of Connecticut (1992), surficial materials at the site consist of thin till. This area is mainly composed of till that is generally less than 10-15 feet thick including areas of bedrock outcrops where till is absent.

According to the Bedrock Geological Map of Connecticut (1985), bedrock underlying the site is the Monson Gneiss, which is a light to dark, medium to coarse grained gneiss. No evidence of bedrock outcrops were noted during the site reconnaissance.

According to the Water Quality Classification Map for the Lower Connecticut River Basin (1993), ground water underlying the site is classified by the CTDEP as GA ground water quality. GA ground water quality is defined by the CTDEP as "ground waters within the area of influence of private and potential public wells. Presumed suitable for direct human consumption without need for treatment. The State's goal is to maintain the drinking water quality."

According to the USGS 7.5 minute topographic map of the Haddam, Connecticut quadrangle, the subject site is located at an approximate elevation which ranges from 90-100 feet above National Geodetic Vertical Datum (NGVD). The site topography gently slopes to the south - southeast. Surface runoff across the site and ground water beneath the site are both likely to flow in a south - southeasterly direction towards Candlewood Hill Brook.



The Candlewood Hill Brook flows through the southern section of the subject site. The Candlewood Hill Brook is classified a Class A surface water body. Class A surface waters are "known or presumed to meet water quality criteria which support designated uses." Designated uses for Class A surface waters are "marine fish, shellfish and wildlife habitat, shellfish harvesting for direct human consumption, recreation, and all other legitimate uses including navigation.

## **2.7    *Site Reconnaissance***

Visual observation of the study site was made on June 15, 2000 by Lee LeBlanc, an Environmental Scientist at Marin. Photographs taken at the time of the inspection are provided in Appendix A. Site improvements, features and observations are described below. Figure 2, the Site Plan, identifies the approximate locations of the features observed during the site reconnaissance.

The site consists of two, two-story brick buildings (Building 81-115 and Building 81-106), two wooden sheds, emergency generator shed, a vehicle and equipment compound area, Candlewood Hill Brook, asphalt paved parking areas, and gravel and grass covered areas. Reportedly, Building 81-115, which is located on the northern section of the subject site, was constructed in approximately 1887, and Building 81-106, which is located on the southern section of the subject site, was constructed in approximately 1838 and 1866. These buildings were once part of the D & H Scovil Hoe Company Mill No. 4 which operated from approximately 1844 to 1942. During these years, the D & H Scovil Company manufactured planters hoes and milled feldspar. From approximately 1942 to the present, the site has been utilized as a repair facility for the Connecticut Department of Transportation. Currently, both Buildings 81-115 and 81-106 primarily consist of several garage bays, tool and hardware storage areas, supply storage areas, materials storage areas, a welding area, two boiler rooms, and office space. According to historic Sanborn Fire Insurance Maps dated 1901, 1908 and 1914, the site consisted of two, two-story brick

buildings and one, wood frame building identified as forge shops belonging to D & H Scovil's Lower Factory. A lumber shed, coal bin, and flume adjacent to Candlewood Hill Brook were also identified on the site. According to a Town of Haddam survey map dated April 1941, a pond identified as the Spar Mill Pond and associated wetlands were located on the western section of the subject site. A dam and spillway was identified at the eastern end of the Spar Mill Pond. The subject site may have been altered in approximately 1942 as a result of the conversion of a mill to a vehicle repair garage.

### **Building 81-115**

Building 81-115, constructed in approximately 1887, was observed on the northern section of the subject site. Building 81-115 was observed to be constructed of concrete floors, brick walls, and asphalt roofing shingles atop a wood roof. The interior of the building was generally constructed of brick, wood, and sheetrock walls, wood and concrete flooring and wood and steel ceilings. The first floor of Building 81-115 was comprised of office space, a boiler room, two tool/hardware storage areas, a restroom, three vehicle repair bays, and a welding area. The second floor consisted of a file storage area and hallway/crawl space.

General office spaces were located on the eastern section of the first floor of Building 81-115. These spaces were generally constructed of brick and sheetrock walls, concrete flooring, and wood and 4' x 2' acoustical tiled ceilings. These areas consisted of desks, chairs, shelving, computers and file cabinets. Fluorescent lighting was observed throughout these office areas. One of the office spaces is used by Test Borings, Inc., a drilling company which also uses various other on-site areas for storage. A fireplace was observed in the Test Boring, Inc. office space. According to Mr. Diaz-Rivera, the fireplace is not currently in use. No unusual staining or odors were observed in these office areas.

A boiler room was located on the eastern section of the first floor of Building 81-115. This room was constructed of concrete flooring and brick walls. This room consisted of a

boiler and an enclosed shower stall. A floor drain was observed at the southern section of the boiler room. According to Mr. Diaz-Rivera, the floor drain discharges to the on-site septic tank located adjacent to the east of Building 81-115. At one time this floor drain may have discharged to an on-site catch basin and then to Candlewood Hill Brook. A chimney was observed adjacent to the north of the boiler room. According to Mr. Diaz-Rivera, this chimney is used as a vent for the boiler. No hazardous materials were observed being stored in this area. No unusual cracking was observed in the concrete floor of the boiler room. No unusual staining or odors were observed in this area.

Two tool/hardware storage areas were observed on the eastern section of the first floor of Building 81-115. These two areas were observed to be constructed of concrete floors, brick walls, and wood ceilings. These two areas were observed to contain various tools and hardware (i.e., wrenches, drills, screwdrivers, nuts, bolts, etc.) used in vehicle maintenance. These tools and hardware were observed to be stored on shelves and in cabinets. No floor drains were observed in either of these two areas. Suspect asbestos piping insulation was observed in one of the tool/hardware storage areas. Some of the suspect asbestos piping insulation was observed to be labeled as asbestos containing material. Fluorescent lighting was observed in these areas. No hazardous materials were observed being stored in this area. No unusual cracking was observed in the concrete floors of these areas. No unusual staining or odors were observed in these areas.

Two restrooms (mens and womens) were observed on the eastern section of Building 81-115. These areas were constructed of brick walls and concrete flooring. Bathroom stalls and sinks were observed in these areas. Fluorescent lighting was observed in these rooms. No hazardous materials were observed being stored in this area. No unusual cracking was observed in the concrete floors of these areas. No unusual staining or odors were observed in these areas.

Three vehicle repair bays with nine overhead garage doors were observed throughout the central and western section of Building 81-115. These areas were observed to be

constructed of concrete floors, brick walls, and wood and steel ceilings. Fluorescent lighting was observed throughout the vehicle repair bays. The repair bays consisted of work benches, toolboxes, hoists, various vehicle maintenance equipment, state-owned trucks and tractors, forklifts, and vehicle repair areas. These areas appeared to be well organized and in good order. One steel 100-gallon diesel AST was observed within a central bay area located in Building 81-115. This tank contains "low sulphur" diesel fuel and is used to fuel the on-site emergency generator located adjacent to the north of Building 81-115. Minimal staining was observed adjacent to the diesel AST. Three steel 55-gallon drums containing hydraulic and motor oil were observed within a central repair bay area. These drums were observed to be located within a secondary containment structure. No unusual staining or odors were observed adjacent to these drums. A parts cleaning station was observed within a central bay area located in Building 81-115. According to Mr. Diaz-Rivera, the parts cleaner is citrus-based and, therefore, very little maintenance is required. Mr. Diaz-Rivera stated that the CTDOT maintains and services this parts cleaner when needed. A utility pit was located in a central bay area located in Building 81-115. The contents and condition of the utility pit was not directly observed. However, Mr. Diaz-Rivera reported that various underground hoses (air), wires and pipes associated with on-site hydraulic and electrical systems which travel between Building 81-115 and 81-106 are contained within this pit. This utility pit may be considered an area of concern. An electrical panel was located on the eastern wall of a central bay area located in Building 81-115. Reportedly, this electrical panel services both Building 81-115 and Building 81-106. One capped floor drain was located within a central repair bay area. According to Mr. Diaz-Rivera, this floor drain may have previously discharged to the on-site catch basin and then to Candlewood Hill Brook. Mr. Diaz-Rivera was not aware of any floor drain sampling previous to the floor drain being capped. A chimney was observed adjacent to the northern wall of the western section of Building 81-115. Reportedly, this chimney is not currently in use. Both labeled and unlabeled suspect asbestos pipe insulation was observed throughout the vehicle repair garage bay areas. Minimal to medium staining was observed throughout the concrete flooring of the vehicle

repair bay areas. No unusual cracking was observed in the concrete floor of the repair garage bays.

A welding area was observed within the western section of Building 81-115. This area was generally constructed of concrete flooring, brick walls, and steel and wood ceilings. Fluorescent lighting was observed throughout this area. The welding area contained various equipment associated with welding including propane tanks, torches, welding tools, scrap metal, a forklift, and personnel protective equipment. A work bench was also observed in this area. One capped floor drain was located in this room. According to Mr. Diaz-Rivera, this floor drain may have previously discharged to the on-site catch basin and then to Candlewood Hill Brook. Mr. Diaz-Rivera was not aware of any floor drain sampling previous to the floor drain being capped. No hazardous materials were observed being stored in this area. Minimal to medium staining was observed throughout the concrete flooring of the welding area. No unusual cracking was observed in the concrete floor of the welding area.

A file storage area and hallway/crawlspace were observed on the second floor of Building 81-115. These areas were observed to be constructed of wood flooring and ceilings. Various boxes of files and paperwork, shelves, and chairs were observed being stored in this area. A hallway/crawlspace was observed extending to the west of the file storage area. This area was not directly observed due to significant rodent infestation (i.e., mice, bats). No unusual staining or odors were observed throughout these areas.

### **Building 81-106**

Building 81-106, constructed in approximately 1866 was observed on the southern section of the subject site. Reportedly, the western section of Building 81-106 may have been part of an earlier mill likely built around 1838. Building 81-106 was observed to be constructed of concrete floors, brick walls, and asphalt roofing shingles atop a wood roof. The interior of the building was generally constructed of brick and wood walls, wood and concrete flooring and wood ceilings. Five overhead garage doors were observed

throughout Building 81-106. The first floor of Building 81-106 was comprised of a boiler room, a supply storage area, a materials storage area, two vehicle repair garage bays, a break area, and a general storage area. The second floor of Building 81-106 consisted of storage areas.

A boiler room was observed adjacent to the eastern section of Building 81-106. This room contained one boiler and associated piping. The boiler room was observed to be constructed of concrete floors and brick walls. A chimney was observed adjacent to the south of the boiler room. This chimney is currently being used as a vent for the boiler. One capped floor drain was located within the boiler room. This floor drain may have discharged to Candlewood Hill Brook prior to it being capped. Mr. Diaz-Rivera was not aware of any floor drain sampling previous to the floor drain being capped. No hazardous materials were observed being stored in this room. No unusual cracking was observed in the concrete floor. No unusual odors or staining were observed adjacent to the boiler.

A supply storage area was observed on the eastern section of Building 81-106. This area was observed to be constructed of a concrete floor, brick walls, and wood and steel ceilings. Fluorescent lighting was observed throughout this area. The supply storage area contained various non-hazardous industrial and household cleaning materials and supplies. These items were observed to be stored in good order on shelving throughout this area. No hazardous materials were observed being stored in this area. No unusual cracking was observed in the concrete floor of this area. No unusual staining or odors were observed in these areas.

A materials storage area was observed on the eastern section of Building 81-106. This area was observed to be constructed of a concrete floor, brick walls, and wood and steel ceilings. Fluorescent lighting was observed throughout this area. This area consisted of general equipment items including hoses, tires, steel, and various vehicle and equipment parts. In addition, five steel 55-gallon drums containing motor oil and hydraulic oil, and

approximately twelve plastic 5-gallon buckets containing motor oil and antifreeze, and vehicle batteries were observed being stored on wooden pallets atop of secondary containment structures in this area. A forklift was observed in this area. No unusual cracking was observed in the concrete floor of this area. No unusual staining or odors were observed in this area.

Two vehicle repair garage bay areas were observed on the central section of Building 81-106. These vehicle repair garage bay areas were observed to be constructed of brick walls, concrete floors. Fluorescent lighting was observed throughout these areas. Approximately eight steel 55-gallon drums containing motor oil and hydraulic oil, two steel 25-gallon drums containing motor oil, and five plastic 5-gallon buckets containing motor oil and hydraulic oil were observed in a vehicle repair garage within the central section of Building 81-106. These containers were observed to be located within secondary containment structures. An air compressor and used filter bin were observed within a repair garage bay area at the central section of Building 81-106. A fill pipe to the 550-gallon waste oil tank, located adjacent to the north, was located adjacent to the air compressor and used filter bin. Heavy staining was observed adjacent to the 550-gallon waste oil tank fill pipe. An aboveground hydraulic lift was observed within a central vehicle repair bay area. According to Mr. Diaz-Rivera, an inground lift was formerly located in the area of the current aboveground lift. In addition, Mr. Diaz-Rivera stated that a small amount of contaminated soil was removed from this area during the installation of the aboveground lift. According to a CTDEP spill report dated August 14, 1998, approximately 70 gallons of hydraulic oil was discharged from an hydraulic lift located within one of the repair garages. Reportedly, approximately 7.5 gallons of the 70 gallons reached the subsurface soil. It is likely that this area is where the reported discharge occurred. The area containing the former inground hydraulic lift and the current aboveground hydraulic lift may be considered an area of concern. A parts cleaning station was observed within a central vehicle repair bay area. According to Mr. Diaz-Rivera, this parts cleaning station is serviced by Advanced Liquid Recycling, Inc. of Meriden, CT "once every couple of months". Two capped floor drains were observed

within the central vehicle repair bay areas. These floor drains may have previously discharged directly to Candlewood Hill Brook. Mr. Diaz-Rivera was not aware of any floor drain sampling previous to the floor drains being capped. No unusual cracking was observed throughout these areas. Minimal to medium staining was observed throughout the concrete floors located within the vehicle repair garage bays.

An employee eating area was observed on the central section of Building 81-106. The area was observed to be caged-in and primarily within a vehicle repair garage bay area located on the central section of Building 81-106. Fluorescent lighting was observed throughout this area. This area consisted of a picnic table, refrigerator, microwave, various food items, chairs, and shelving. No unusual cracking was observed in this area. No unusual staining or odors were observed in the break area.

A general storage area was observed on the western section of Building 81-106. This area was constructed generally of concrete floors, brick walls, and wood and steel ceilings. Fluorescent lighting was observed throughout this area. This storage area consisted of drilling equipment (i.e., augers) and associated tools. According to Mr. Diaz-Rivera, this area is used by the drilling company Test Borings, Inc. as general storage space. Two capped floor drains were observed throughout this area. These floor drains may have previously discharged directly to Candlewood Hill Brook. Mr. Diaz-Rivera was not aware of any floor drain sampling previous to the floor drain being capped. Minimal staining was observed throughout the concrete floor of the general storage area. No hazardous materials were observed being stored in this area. No unusual cracking in the concrete floor was observed. No unusual odors were observed.

The second floor of Building 81-106 consisted of two storage areas. One storage area located above the eastern section of Building 81-106 was observed to contain several empty wooden shelves. This area was observed to be constructed of wood floors, brick walls, and wood ceilings. Fluorescent lighting was observed throughout this area. The second storage area, located above the western section of Building 81-106, was observed



to contain various road signs and other field supplies. This area is also used by Test Borings, Inc. and constructed of wood floors, brick walls, and wood ceilings. No hazardous materials were observed being stored in these areas. No unusual staining or odors were observed in these storage areas.

#### **Wooden Sheds and Emergency Generator Shed**

Two wooden storage sheds were observed adjacent to the west of Building 81-106. The northern shed was observed to contain an old engine and the former inground lift that was previously removed from the vehicle repair garage bay area in Building 81-106. No hazardous materials were observed being stored in this shed. No unusual staining or odors were observed adjacent to or in this shed. The southern, larger shed was observed to contain various boxed bedrock core samples and boxes of soil jars. Apparently, this shed is used for storage by Test Borings, Inc. No hazardous materials were observed being stored in this shed. No unusual staining or odors were observed adjacent to or within this shed. Snow plows were observed being stored adjacent to these sheds.

An emergency generator shed was observed adjacent to the north of Building 81-115. This shed was observed to be constructed of a concrete floor, wood frame, and asphalt roofing. One generator was observed inside the shed. No hazardous materials were observed being stored within the shed. No unusual cracking was observed in the concrete floor of this area. No unusual staining or odors were observed adjacent to the generator or generator shed.

#### **Additional Site Features**

According to Mr. Diaz-Rivera and CTDEP UST reports, five USTs are located throughout the subject site. One fiberglass 2,000-gallon #2 heating oil UST is located adjacent to the exterior of the northeast corner of Building 81-115. This tank, installed in March 1989, is used to heat Building 81-115. One fiberglass 2,000-gallon #2 heating oil UST, one fiberglass 4,000-gallon unleaded gasoline UST, and one fiberglass 4,000-gallon diesel UST are located centrally between Building 81-106 and the vehicle and equipment

compound area. These tanks, installed in March 1989, are used to store fuel for the heating of Building 81-106 and the fueling of on-site vehicles and equipment. Fuel dispensing pumps associated with these USTs are located centrally between Building 81-115 and 81-106. One steel 550-gallon waste oil UST is located adjacent to the northern exterior of Building 81-106. This tank, installed in March 1989, is used to store used oil. According to Mr. Diaz-Rivera, the 550-gallon waste oil tank is emptied approximately twice a year by United Oil Recovery, Inc. of Meriden, CT. According to the CTDEP UST reports and visual observations, these USTs all have some form of monitoring system (i.e., UST monitoring wells) associated with their operation. No unusual staining or odors were observed adjacent to these USTs.

One steel 100-gallon diesel AST was observed within the central bay area located in Building 81-115. This tank contains "low sulphur" diesel fuel and is used to fuel the on-site emergency generator located adjacent to the north of Building 81-115. Minimal staining was observed adjacent to the diesel AST.

One septic tank is located adjacent to the east of Building 81-115 beneath an asphalt paved parking area. This tank is currently in use. No unusual staining or odors were observed adjacent to the septic tank. The area containing the septic tank may be considered an area of concern.

According to Mr. Diaz-Rivera and CTDEP UST reports, several USTs have been removed from the subject site. In March of 1989, one steel 3,000-gallon unleaded gasoline UST was removed from an area located adjacent to the current fuel dispensing pump. This UST was installed in approximately 1960. In March of 1989, two steel 2,000-gallon #2 heating oil USTs were removed from an area located east of Building 81-106 and north of Building 81-115. The #2 heating oil UST formerly located east of Building 81-106 was reportedly installed in approximately 1962. The heating oil UST formerly located north of Building 81-115 (adjacent to Building 81-115 office area) was reportedly installed in 1941. In March 1989, one steel 1,000-gallon waste oil UST was

removed from an area north of Building 81-106. This tank was reported to have been installed in 1968. In March 1989, one steel 550-gallon diesel UST was removed from an area located adjacent to the northeast corner of Building 81-106. This tank was reported to have been installed in approximately 1955. Additional information regarding the removal of these tanks was not found in the Town and State files.

Areas containing former and present USTs may be considered areas of concern.

A suspect fill area, consisting of dirt and gravel, was located on the western section of the subject site. This area, higher in elevation to the rest of the site and approximately .5 to 1 acre in size, was observed to contain two piles consisting of asphalt, soil, and concrete pipes. Further to the east, a pile of creosoted wood beams were observed. According to Mr. Diaz-Rivera, the origins of these piles is unknown. Mr. Diaz-Rivera also stated that he frequently finds dumped materials on this section of the property. Due to the open nature of this area, materials may be dumped easily and without notice. According to CTDEP, CTDOT, and Town files, this area of the property has historically been investigated as a potential source of area wide ground water contamination due to dumping activities that have occurred since the garage was established in approximately 1941. According to CTDEP and CTDOT reports, approximately four to five drums of pesticides/herbicides, and approximately 2,000 gallons of pavement sealer were buried in this area during the late 1970s. According to CTDEP and CTDOT files, evidence of pesticide/herbicide drum burial was inconclusive. However, constituents of pavement sealer were detected at high concentrations in the soil in this area. According to a CTDOT Progress Report dated June 8, 1988, approximately 70 cubic yards of joint sealer (tar) and related soil were removed from the site. Reportedly, three drums containing joint sealer and one drum containing approximately four inches of an unknown liquid were unearthed during removal activities. This suspect fill area may be considered an area of concern.

According to a Town of Haddam survey map dated April 1941, the site contained a pond and associated wetlands on the western section of the subject site in the approximate area of the suspect fill area. This pond was named the Spar Mill Pond and may have been used as a dumping area previous to it being filled in. According to aerial photographs of the subject site, the pond was likely filled in sometime in the mid to late 1940s. Information regarding exactly how long the possible dumpsite existed, who used it, and what actually was dumped there is not known. No unusual staining or odors were observed in the suspect fill area during the site walk.

A number of ground water monitoring wells were observed throughout the western section of the subject site. These monitoring wells were likely installed to investigate ground water and soil contamination in the area of the suspect fill area. One well pair (shallow, deep) was located at an upgradient hydrogeological location of the suspect fill area while the remaining five monitoring wells were located at a lateral and downgradient hydrogeological location of the suspect fill area. A limited inspection of the monitoring wells concluded that the wells appear to be in good condition and could be sampled in the future, if needed. Ground water and soil analytical results, found in CTDEP files, associated with these wells indicate concentrations of volatile organic compounds, base/neutral and acid extractables, pesticides, and metals have been reported to be detected in the soil and ground water in the suspect fill area.

According to a sample location map included in the Draft Phase I Grab Sampling/Geophysical Report, ConnDOT Hazardous Waste Site Investigation Study (Pages II-142-II-148) dated October 1985 prepared by Fred C. Hart Associates, Inc. of Meriden Connecticut, a steam cleaning area south of Building 81-106 and a solvent odor northwest of Building 81-106 were noted. In addition, an area identified as a drum storage was present north of the two wooden sheds located on the western section of the subject site. These areas were observed during the site inspection and evidence of any unusual staining or odors were not observed. These areas may be considered areas of concern.

One potable water supply well was observed on the western section of the subject site. This well supplies water for the subject site. The location of the well is hydrogeologically upgradient from the suspect fill area and may be impacted by this area.

A manhole-like structure was observed adjacent to the west of the steel 550-gallon waste oil UST located on the northern exterior of Building 81-106. According to an Atlantic Environmental Services, Inc. Summary of Stormwater Drainage Map dated June 1996, acquired via the CTDOT, this structure may have been an abandoned well. Mr. Diaz-Rivera did not have any information regarding this structure.

A vehicle and equipment compound area was observed on the eastern section of the subject site. This area was observed to be fenced-in and currently contained several state-owned vehicles and drilling equipment owned by Test Borings, Inc. A scrap metal dumpster was located within the compound area. A combination of gravel, stone, and asphalt millings were observed as the base of the compound area. According to a sample location map included in the Draft Phase I Grab Sampling/Geophysical Report, ConnDOT Hazardous Waste Site Investigation Study (Pages II-142-II-148) dated October 1985 prepared by Fred C. Hart Associates, Inc. of Meriden Connecticut, a solvent storage area was noted within the vehicle and equipment compound area. The former solvent storage area may be considered an area of concern. According to Sanborn Fire Insurance Maps dated 1901, 1908, and 1914, and a Town of Haddam survey map of the subject site dated April 1941, a factory building, constructed of wood, identified as a Forge Shop, was located in the area of the vehicle and equipment compound area. This building contained an earthen floor, turbine and tail race. According to aerial photographs, this wooden building was likely demolished sometime in the 1940s. No hazardous materials were observed being stored in the compound area. No unusual staining or odors were observed adjacent to or within the vehicle and equipment compound area. The area of the former forge shop may be considered an area of concern.

According to Mr. Diaz-Rivera and field observations, erosion is evident throughout the site, specifically in an area between the USTs located east of Building 81-106 and Candlewood Hill Brook. A rip-rap channel was installed in this area to minimize erosion caused by surface water run-off from the site to the brook.

Two catch basins were located on the subject site. One catch basin was located adjacent to the northeast section of Building 81-115. One catch basin was observed adjacent to the northeastern corner of Building 81-106. According to Mr. Diaz-Rivera, several of the floor drains located in Building 81-115 previously discharged to this catch basin and then to Candlewood Hill Brook prior to being capped. The catch basins currently discharge to the Candlewood Hill Brook. All capped floor drains located in Building 81-106 may have discharged directly to Candlewood Hill Brook. According to Mr. Diaz-Rivera, all floor drains that are not capped (i.e., floor drain located in the boiler room of Building 81-115) currently discharge to the on-site septic tank. In addition, Mr. Diaz-Rivera also stated that water that collects in the catch basin is a result of the natural drainage of the site. The catch basins, floor drains, and additional components of the site's conveyance system may be considered an area of concern.

An outfall pipe was observed adjacent to the Candlewood Hill Brook on the southern section of the subject site. This outfall pipe is believed to originate from the catch basin located adjacent to the northeastern corner of Building 81-106. This outfall pipe may be the discharge point of several of the former floor drains located on the site. No unusual staining, odors, or stressed vegetation were observed adjacent to the outfall pipe.

Several stone and concrete structures associated with past milling activities (i.e., flume, damn, spillway) were observed adjacent to and within the Candlewood Hill Brook. These structures were likely once part of the water diversion system associated with the generation of hydropower for on-site operations.

An abandoned barge was observed on the western section of the subject site. According to Mr. Diaz-Rivera, the barge was used by Test Borings, Inc. who currently utilize areas of the subject site for storage purposes.

Asphalt-paved parking areas were observed throughout the eastern, central, and western sections of the subject site. No unusual cracking was observed throughout the asphalt paved parking areas. No unusual staining or odors were observed adjacent to the asphalt paved parking areas.

The Candlewood Hill Brook flows through the southern section of the subject site. The Candlewood Hill Brook is classified a Class A surface water body by the CTDEP.

## 2.8 *Area Reconnaissance*

According to the Town of Haddam Land Use Department the site is located in an area zoned C-1, which indicates a commercial district. The site is abutted to the west by vacant undeveloped land, to the south by Candlewood Hill Brook, to the north by Candlewood Hill Road, and to the east by the Haddam Volunteer Fire Department.

### 3.0 SITE AND AREA HISTORY

#### 3.1 *Historical Ownership*

Historical ownership of the subject site was researched at the Town of Haddam Town Clerk's office. The table below summarizes the ownership history as revealed during the research.

Owner	Date of Ownership
D & H Scovil Hoe Company	~1838
Sarah A. Garrity	9/18/31
Connecticut Department of Transportation	3/24/41-Present

#### 3.2 *Aerial Photograph Review*

Aerial photographs from the years 1934, 1951, 1965, 1970, 1975, 1980, 1985, 1990 and 1995, were reviewed for signs of large-scale staining, filling, dumping, or excavating at the site or in the vicinity, as well as for indications of on-site activities. Copies of the 1965-1995 aerial photos are provided in Appendix A.

##### 1995-1951 Aerial Photographs

The site and surrounding area appear similar to present day conditions.

##### 1934 Aerial Photograph

The site and surrounding properties appear similar to the 1951 aerial photograph. However, a building was located adjacent to the east of the present day Building 81-106. A structure was observed attached to the northeastern section of Building 81-106. In addition, a pond and associated wetlands were observed on the western section of the subject site. A structure which appeared to resemble a damn was observed adjacent to the eastern section of the pond.



### 3.3 *Street Directories and Sanborn Maps Review*

#### Street Directories

Town street directories were reviewed for the subject site. Results of the findings are listed below:

Street Number	Site Occupant	Years of Occupancy
Not Available	State of Connecticut Department of Transportation	1977-1966

#### Sanborn Fire Insurance Maps

Sanborn Fire Insurance Maps were reviewed for the years 1901, 1908 and 1914. The site was depicted in each of the maps. Copies of the Sanborn Maps are provided in Appendix C.

##### 1901 Sanborn Map

The subject site is identified as the "D&H Scovil's Lower Factory", manufacturer of plantation hoes. The site is depicted as containing one, two-story brick building identified as a forge shop and one, two-story wood building identified as a forge shop. These two buildings were observed in line with each other, connected by a one-story structure, on the southern section of the subject site. A structure identified as a flume was observed running along the southern bank of the Candlewood Hill Brook and into the two-story wood building identified as a forge shop. The two-story brick building was identified as containing a machine room and wood working room on the eastern section of the building and a grinding room on the western section of the building. The central section of the brick building was identified as a forge shop. An engine room was identified on the east-central section of the building. A boiler room containing a boiler was identified adjacent to the northeastern section of the brick building. A brick chimney approximately 100 feet tall was identified adjacent to the west of the boiler room. The brick building was identified as containing an earthen floor. The two-story wood building located adjacent to the east of the two-story brick

building was identified as containing an earthen floor. A lumber shed and a coal bin were identified north of the two-story wood building. Candlewood Hill Road adjacent to the north was identified as Forge Road. The western section of the subject site was identified as having no exposure and therefore no coverage of that area was provided. Surrounding properties included Forge Road to the north, residential properties to the east, and Candlewood Hill Brook to the south.

#### 1908 & 1914 Sanborn Maps

The 1908-1914 Sanborn Maps depicted similar conditions to those in 1901. However, the 1908 and 1914 maps contained a third building identified as a forge shop located adjacent to the north of the two-story brick building located at the subject site. The third building was identified as being 262 feet long and containing an area identified as a forge shop within the central section of the building and an engine room located at the eastern section of the building. In addition, two boilers were identified within the boiler room located adjacent to the northeastern section of the two-story brick building located on the southern section of the subject site. Lastly, a shed was identified adjacent to the southwestern corner of the two-story brick building located on the southern section of the subject site. Surrounding properties appear similar to the 1901 Sanborn Map.

## 4.0 SITE REGULATORY INFORMATION

### 4.1 *Pertinent File Review/Research*

Marin reviewed municipal records for permits, environmental violations, infractions, incidents, complaints and orders relating to the subject site. Marin additionally performed a search of State and Federal databases for the site and surroundings by use of the VISTA StarView computer search system. A copy of the StarView report is provided in Appendix D. Additional sources of information reviewed for this assessment included:

- CTDEP List of Property Transfer filings under the Connecticut Transfer Act;
- CTDEP Leachate and Wastewater Discharge Sources Map;
- CTDEP Water Quality Classifications Map;
- CTDEP Water and Waste Management Bureau public files; and
- CTDEP Spill incident reports, 1978-2000.

### 4.2 *Results of Regulatory Review*

The State and Federal databases searched under the scope of this site assessment do not list the site as a National Priority List (NPL) site, RCRA Corrective Action site, or a State equivalent priority list (SPL) site. The site is not listed as a RCRA-permitted Treatment, Storage, Disposal (RCRA-TSD) facility, a LUST site, an US EPA CERCLIS/NFRAP site, or a registered Solid Waste Landfill. The site is not included in the Toxic Release Inventory (TRIS) database and is not listed as a RCRA Generator of Hazardous Waste, RCRA Violator or containing USTs.

The State and Federal databases searched under the scope of work of this assessment did list the site as a State Equivalent CERCLIS List (SCL) facility. The database listed the site as being polluted with herbicides. Additional information was not available.

According to CTDEP spill reports, two oil/chemical spills were reported for the subject site. They are as follows:

On June 6, 1982, approximately 1,500-gallons of #2 heating oil and waste oil were discharged to Candlewood Hill Brook located on the southern section of the subject site. The discharge was a result of a flash flood which removed one 1,000-gallon waste oil UST and one 2,000-gallon #2 heating oil UST from the ground and carried them downstream towards the center of Higganum, CT. According to the report, corrective actions were put in place by CTDOT to remediate the contamination. At the time of the 1982 report, the contamination was being monitored.

On August 14, 1998, approximately 70 gallons of hydraulic oil was discharged from an hydraulic lift inside one of the repair buildings. According to the report, approximately 7.5 gallons of hydraulic oil reached the subsurface soil. Reportedly, the cause of the discharge was due to seepage from the lift and consequently the lift was taken out of service. At the time of the report issuance, the spill had not yet been remediated due to the fact that the facility was "to be closed in the near future" and a closure plan would address site-wide remedial measures".

According to the "Leachate and Wastewater Discharge Source (LWDS) Inventory for the Lower Connecticut River Basin," the subject site is listed as containing a former waste disposal site.

According to CTDEP UST reports, five USTs are located throughout the subject site. In addition five USTs have been removed from the subject site. A summary of former and current tanks is provided below:

<b>Tank ID</b>	<b>Installation Date</b>	<b>Capacity (gals.)</b>	<b>Contents</b>	<b>Removal Date</b>	<b>Construction</b>
R-1	1960	3,000	Unleaded Gas	3/89	Steel
H-1	1962	2,000	#2 Heating Oil	3/89	Steel
W-1	1968	1,000	Waste Oil	3/89	Steel
R-2	1960	3,000	Unleaded Gas	3/89	Steel
D-1	1955	550	Diesel Fuel	3/89	Steel
H-2	1941	2,000	#2 Heating Oil	3/89	Steel
H4RI	3/89	4,000	Heating Oil	In Use	Fiberglass
D1RI	3/89	4,000	Diesel Fuel	In Use	Fiberglass
U2RI	3/89	4,000	Unleaded Gas	In Use	Fiberglass
H3RI	3/89	2,000	Heating Oil	In Use	Fiberglass
W05R1	3/89	550	Waste Oil	In Use	Steel

Two CTDEP Interdepartmental Messages regarding site inspections dated May 20, 1983 and June 22, 1983, were reviewed. The reports summarized two site inspections which investigated the possibility of hazardous waste disposal at the site. The reports indicated that garage personnel admitted to burying approximately four to five drums of the herbicides 2,4-D and 2,4,5-T in a disposal area on the western section of the subject site in approximately 1975. Reportedly, the drums were buried approximately ten feet below the surface. In addition, the reports state that approximately 2,000 gallons of a tar (joint sealer) called "MC85 to 100" was dumped in the disposal area on the western section of the subject site in the early 1960s. According to the report, an excavation of the suspected drum burial area was conducted in April of 1981. No drums were found.

According to a CTDEP letter dated June 22, 1983 and an associated Inventory Report to the Town of Haddam concerning the Connecticut Department of Transportation Maintenance Facility, located on Candlewood Hill Road, at least four to five drums of herbicides (2,4-D and 2,4,5-T) had been buried at the site. Attempts were made to remove the drums, but were unsuccessful. According to the letter, soil samples collected as part of an excavation and soil sampling program conducted at the site in April of 1981, found

"no trace of these contaminants." In addition, approximately 2,000 gallons of pavement sealer had also been dumped in bulk into the fill area. This material (pavement sealer) was subsequently sampled and found to have contained high concentrations of benzene and toluene. The Inventory Report recommended that extensive work be undertaken to excavate and remove buried wastes and contaminated soils, and to install a permanent monitoring well network between the site and the private supply wells located across Candlewood Hill Road.

According to a Connecticut Department of Health Services (CTDHS) letter dated February 28, 1984 to the Town of Haddam, several wells adjacent to the Connecticut Department of Transportation Maintenance Facility, including the well located on the subject site, were analyzed for volatile organics, hydrocarbons, and herbicides. This testing was being conducted as part of the investigation performed by the CTDEP regarding possible ground water contamination at the Connecticut Department of Transportation Maintenance Facility on Candlewood Hill Road. The letter states that several of the samples indicated low levels of trichloroethylene (TCE). Although TCE concentrations were below the action level, further investigation was recommended by the CTDEP. Analytical reports indicated that "trace" amounts of toluene and F45 Ortho Hydrocarbons were detected in the well located on the subject site.

According to a CTDOT Waste Disposal Study Detailed Questionnaire Form dated January 28, 1985, background information and site description, waste characteristics, pathways, receptors, and waste management practices at the Higganum Repair Garage were outlined. The questionnaire identified the site as a disposal site and containing an area of a solvent odor. The Questionnaire did not include a map detailing the area of the solvent odor.

A CTDEP letter dated March 29, 1988 to the Connecticut Department of Transportation required clarification and areas that were selected for additional study at the Connecticut Department of Transportation Maintenance Facility on Candlewood Hill Road. In

addition, the ground water problems in the areas were reported. Low levels of widespread contamination of the ground water in the area with benzene, trichloroethylene, acetone, and sodium. Concentrations of benzene at the site appear to be "potentially attributable to the landfilling activities" at the site. The levels of acetone and sodium also appear to be related to the Department of Transportation Facility. At the time of the issuance of this letter, the Base/Neutral problem originating from the landfill had not been fully defined. The CTDEP recommended that the ground water studies at the landfill, maintenance facility and salt storage area be reported in a single study produced by a single consultant since the ground water problem is "too complex". Various tasks for the landfill and ground water study were outlined in this letter.

According to a CTDOT Progress Report dated June 8, 1988, approximately 70 cubic yards of joint sealer (tar) and related soils were buried at the site. During excavation activities, three drums containing tar and one drum containing approximately four inches of an unknown liquid were unearthed and disposed off-site.

According to a CTDEP letter to the Connecticut Department of Transportation dated November 11, 1991, comments regarding the review of the Finding of No Significant Impact (FONSI) report were summarized. Some of the important points made in the letter are as follows: the ground water in the area of facility has been adversely impacted by sodium, chloride, solvents and metals (chromium); and the potable supply well located on the western section of the DOT property and a few adjacent water supply wells have been impacted by elevated sodium and chloride levels, low levels of chlorinated solvents, and/or chromium. Additionally, the letter expresses that a new septic system will be installed at the site and the proper closure/abandonment procedures to the old system should take place. In addition, the letter states that, due to the apparent water quality at the site (GA), chemical handling and storage at the facility should be conducted in a manner that protects the ground and surface water quality of the State. Other issues addressed in the letter included additional well installation, well yield, construction of a

road salt shed, discharge of floor drains, stormwater drainage, erosion, aesthetics, and asbestos containing building materials.



## 5.0 AREA REGULATORY INFORMATION

### 5.1 *Pertinent File Review/Research*

Pertinent State and Federal records and lists detailed in Section 4.1 of this report were reviewed for environmental infractions, incidents, complaints, and permits associated with the properties within the vicinity of the site. Copies of documents pertaining to area sites are included in Appendix F. A copy of the VISTA StarView database report is included in Appendix D.

### 5.2 *Results of Regulatory Review*

According to the VISTA report, no National Priority List (NPL) sites or RCRA Corrective Action sites were identified within a one mile radius of the subject site. No RCRA-TSD facilities or Leaking Underground Storage Tank (LUST) sites were identified within an approximate half-mile radius of the subject site according to the data base report. No Toxic Release (TRIS) sites, US EPA Generator (GNRTR), US EPA RCRA Violation (Viol) sites or registered underground storage tank (UST) sites were identified within a one-eighth mile radius of the subject site.

There was one State equivalent priority list (SPL) site identified within a one-mile radius of the subject site. There were five State equivalent CERCLIS list (SCL) sites, four US EPA CERCLIS/NFRAP sites, one Solid Waste Landfill (SWLF), and one spill (SPILLS) site identified by the VISTA report within a one-half mile radius of the subject site.

VISTA information is included in Appendix D.

In addition to the VISTA report, CTDEP files reported one LUST site, 17 additional spills sites within one-half mile of the subject site. One Notice of Violation and one

Order were reported within one-quarter mile of the subject site and one RCRA generator and one UST site within one-eighth mile of the subject site.

State Equivalent Priority List (SPL)

One State Equivalent Priority List (SPL) site was identified by VISTA within a one mile radius of the subject site. The Frismar Corporation, located on Nosal Road, approximately 0.21 miles northeast of the subject site was identified as a State Equivalent Priority List (SPL) site.

State Equivalent CERCLIS List (SCL)

Five State Equivalent CERCLIS List (SCL) sites were identified by VISTA within a one-half mile radius of the subject site. J.C. Products, Inc., located at 305 Main Street, approximately 0.04 miles east of the subject site; Neil's Drive-In Cleaners, located at 27 Killingworth Road, approximately 0.09 miles southeast of the subject site; Chadwick House, located at 346 Saybrook Road, approximately 0.23 miles east of the subject site; Illustrated Printing Company, located at 212 Saybrook Road, approximately 0.45 miles west of the subject site; and Higganum Center, located at Higganum Center, approximately 0.44 miles east of the subject site were identified as State Equivalent CERCLIS List (SCL) sites.

US EPA CERCLIS/NFRAP List

Four US EPA CERCLIS/NFRAP List sites were identified by VISTA within a one-half mile radius of the subject site. J.C. Products, Inc., located at 305 Main Street, approximately 0.14 miles east of the subject site; The Former Frismar, Inc. facility, located at 35 Dublin Hill Road, approximately 0.21 miles northeast of the subject site; Higganum Manufacturing Company, located on Saybrook Road, approximately 0.32 miles east of the subject site; and Illustrated Printing Company, located on Saybrook Road, approximately 0.34 miles northwest of the subject site were identified as US EPA CERCLIS/NFRAP List sites.

### Solid Waste Landfill (SWLF)

One Solid Waste Landfill (SWLF) site was identified by VISTA within a one-half mile radius of the subject site. Higganum Cove Associates, located at 19 Nozzle Road, approximately 0.44 miles northeast of the subject site was identified as a Solid Waste Landfill (SWLF) site.

### Leachate and Wastewater Discharge Sources

According to the "Leachate and Wastewater Discharge Source (LWDS) Inventory for the Lower Connecticut River Basin," the subject site is located within Subregion No. 4014, Ponset Brook. The LWDS sites identified within a half-mile radius of the subject site include the Town of Haddam Garage, located approximately 0.05 miles northeast of the subject site, which is listed as containing covered and uncovered sand/salt storage on asphalt; Illustrated Printing, located approximately 0.45 miles west of the subject site, which is listed as discharging photograph chemicals to the septic system since 1977; J.C. Products, Inc., located approximately 0.14 miles east of the subject site, which is listed as discharging trichloroethylene (TCE) to ground water; Frismar, Inc., located approximately 0.21 miles northeast of the subject site, which is listed as discharging spent coating chemicals (ethanol, methanol, benzene) to the ground for over 50 years; Higganum Manufacturing Company, located approximately 0.32 miles east of the subject site, which is listed as a former TCE discharger to the ground since 1954; Higganum Cove (Frismar) (Basin 4000, Connecticut Main Stem), located approximately 0.43 northeast of the subject site, is listed as a former PCB, asbestos and petroleum spill site; a well contaminated with cleaning solvents, located approximately 0.10 miles southeast of the subject site; and a domestic well contaminated with cleaning solvents, located approximately 0.35 miles southeast of the subject site.

### Notice of Violation

According to a CTDEP Notice of Violation, dated May 15, 1998, the Rossi Corporation, located at 300 Saybrook Road, approximately 0.18 miles east of the subject, was reported as failing to submit stormwater monitoring results for the October 1, 1996-September 30,

1997 sampling year per Part VI.C.3. of the Stormwater General Permit issued October 1, 1992, modified October 1, 1995.

### Order

According to a draft CTDEP Order dated September 20, 1984, J.C. Products, located approximately 0.14 miles east of the subject site, was ordered to investigate the extent and degree of ground water, surface water and soil contamination resulting from chemical storage, handling and disposal activities; take necessary remedial actions to minimize or eliminate the contamination resulting from such practices; and to implement a plan to provide for best management practices for chemical storage, handling and disposal.

### RCRA Generators

One RCRA Generator site was identified in the CTDEP files. Neal's Cleaners, located at 27 Killingworth Road (Rt. 81), approximately 0.09 miles southeast of the subject site was reported as a Conditionally Exempt Small Quantity Generator of hazardous waste.

### Bureau of Water Management

The following P5 forms were reviewed at the CTDEP Bureau of Water Management. Copies of each document are included in Appendix F.

- According to a March 17, 1976 P5 Form, J.C. Products, Inc., located on Main Street, was established in 1953 as a producer of wire display racks. Reportedly, site processes included wire forming, resistance welding, degreasing (trichloroethylene) and painting with a dip-type lacquer. The origin of on-site waste was primarily from degreasing activities. The used trichloroethylene was reported to be collected by a supplier. Sanitary waste was discharged to the on-site septic tank and water was supplied by the on-site water supply well.

J.C. Products is located in a potential down gradient hydrogeological direction of the subject site and is not likely to effect ground water quality at the subject site.

- According to a September 6, 1988, P5 Form, Rossi Corporation, located at 300 Main Street, was reported as a producer of lumber and pallets. Reportedly, site processes included lumber cutting, kiln drying, pallet manufacturing, and machine repair. No industrial wastes are reported to originate on-site but some waste is produced in the repair garage. Solvents originating from the site were reported to be handled by Safety-Kleen. The report also notes that a floor drain in the repair garage appears to be an open oil/water separator. Sanitary waste was discharged to two, on-site septic tanks and water was supplied by two on-site supply wells.

The Rossi Corporation is located in a potential down or lateral gradient hydrogeological direction of the subject site and is not likely to effect ground water quality at the subject site.

- According to a March 17, 1976, P5 Form, The Higganum Manufacturing Corporation, located on Main Street, was established in 1954 as a producer of wire display racks. Reportedly, site processes included wire forming, welding, degreasing (vapor with trichloroethylene) and painting (lacquer). The origin of on-site waste was primarily from degreasing activities. The used trichloroethylene was reported to be disposed of at Town refuse area and then later collected and recycled by the supplier. Metals were reported to be found within waste material. Sanitary waste was discharged to a septic tank located in the building floor. A sink drain was reported to drain to a dry well. Water was supplied by a supply well located within an unspecified house.

The Higganum Manufacturing Corporation is located in a potential down or lateral gradient hydrogeological direction of the subject site and is not likely to effect ground water quality at the subject site.

- According to an October 4, 1973, P5 Form, Frismar, Inc., located on Dublin Hill Road, was established in 1937 as a producer of mimeograph stencils. Reportedly, site processes included coating lacquer preparation, roll coating, hot air drying, collation and printing. Lacquer thinner, containing solvents such as ethyl acetate, ethanol, methanol, isopropanol and benzene, was produced as an on-site waste. The report stated that the lacquer thinner was diluted and it was never discharged. The report failed to mention how on-site waste was disposed. Sanitary waste was discharged to a septic tank. Water was used from a nearby brook as boiler water. Potable water was supplied by a supply well and stored within a 1,000-gallon storage tank on the roof of one of the buildings.

Frismar, Inc. is located in a potential down gradient hydrogeological direction of the subject site and is not likely to effect ground water quality at the subject site.

According to a CTDHS letter dated February 28, 1984 to the Town of Haddam, several potable wells adjacent to the Connecticut Department of Transportation Maintenance Facility, including the well located on the subject site, were analyzed for volatile organics, hydrocarbons, and herbicides. This testing was being conducted as part of the investigation performed by the CTDEP regarding possible ground water contamination at the Connecticut Department of Transportation Maintenance Facility on Candlewood Hill Road. The letter states that several of the samples indicated low levels of trichloroethylene. Although below the action level, further investigation was recommended by the CTDEP.

### 5.3 *Underground Storage Tanks/Oil & Chemical Spill Incidents*

#### Leaking Underground Storage Tanks

The VISTA report identified no Leaking Underground Storage Tank (LUST) sites within a one-half mile radius of the subject site.

CTDEP files reported one Leaking Underground Storage Tank (LUST) site within one-half mile of the subject site.

On August 8, 1993, two steel 5,000-gallon and two steel 2,000-gallon USTs located at Rossi Lumber at 300 Saybrook Road, approximately 0.18 miles east of the subject site, were reported as leaking. The USTs were reported as containing gasoline. According to the report, the spill was caused by overfilling. All four USTs and impacted soils were removed.

#### Registered Underground and Aboveground Storage Tanks

The VISTA database reported no registered underground storage tank (UST) sites within a one-eighth-mile radius of the subject site.

#### Oil and Chemical Spills

According to the database report which summarizes spills between 1991 to 1999 and files of the CTDEP Oil and Chemical Spills section reviewed for the years 1979-2000, there are approximately 17 properties within a half-mile radius of the subject site which have had documented spills. Spills that have occurred on properties within one-half mile of the site are summarized in the following table.

<b>Date</b>	<b>Location</b>	<b>Incident, Quantity</b>	<b>Present Status</b>
9/14/82	Candlewood Hill Road/Maple Road	Transfer line failure; approximately 10 gallons of diesel fuel.	Closed
11/18/87	Depot Road.	Dumping; approximately 8-15 gallons of fuel oil.	Closed
9/9/88	Approximately 500 feet from Rt. 154 and Rt. 81 intersections	Vandalism; approximately 20 gallons of motor oil.	Unspecified
9/18/91	Higganum Reservoir	Unknown cause; high concentration of blue green algae on surface of water.	Unspecified
8/26/92	Higganum Reservoir	Unknown cause; oil sheen on water and oil splotches on surface.	Closed
7/18/93	27 Killingworth Road	Dumping; approximately 500 gallons of unknown chemical from dry cleaners.	Closed
8/9/93	Rossi Corporation, Rt. 154	UST removal; approximately 30 cubic yards of contaminated soil removed.	Unspecified
11/16/93	Rossi Corporation	Unknown cause; unknown quantity of brown substance to brook.	Closed
4/12/94	210 Saybrook Road	Transfer line failure; unknown quantity of gasoline.	Open
9/21/94	Higganum Reservoir	Approximately one acre of green substance (algae) on water surface.	Unspecified
12/28/94	Haddam Elementary School; Saybrook Road	Pumping; approximately one gallon of # 2 fuel oil and storm water.	Closed
5/19/95	122 Killingworth Road	UST failure; unknown quantity of #2 fuel oil.	Closed
2/8/96	Rossi Corporation, 300 Saybrook Road	Overfill; approximately three gallons of #2 fuel oil.	Unspecified
3/10/99	Rossi Lumber, 300 Saybrook Road	Historical soil contamination; unknown quantity of #2 fuel oil.	Closed
10/18/99	7 Candlewood Hill Road	Seepage; unknown quantity of magnesium.	Closed
12/30/99	210 Saybrook Road	Overfill; approximately five gallons of gasoline.	Closed
3/16/00	Depot Road at Rt. 154	Unknown cause; approximately one gallon of transformer oil.	Closed



## 6.0 CONCLUSIONS AND RECOMMENDATIONS

Marin Environmental, Inc. (Marin) has completed a Phase I Environmental Site Assessment (ESA) of the Connecticut Department of Transportation Higganum Repair Garage located at 11 Candlewood Hill Road within the Village of Higganum, Town of Haddam, Connecticut. The subject site consists of approximately 4 acres.

The site consists of two, two-story brick buildings (Building 81-115 and Building 81-106), two wooden sheds, emergency generator shed, a vehicle and equipment compound area, asphalt paved parking areas, and gravel and grass covered areas. Reportedly, Building 81-115, which is located on the northern section of the subject site, was constructed in approximately 1887, and Building 81-106, which is located on the southern section of the subject site, was constructed in approximately 1838 and 1866. These buildings were once part of the D & H Scovil Hoe Company Mill No. 4 which operated from approximately 1844 to 1942. The site has since been utilized as a repair facility for the Connecticut Department of Transportation (CTDOT).

Based on the results of this Phase I ESA, it is likely that a release to the environment has occurred at the site. Fourteen areas of concern (AOCs) were identified. These AOCs were identified based on known, documented releases to the environment or the potential for a release to the environment based on observed site conditions or historic information. The areas of concern are as follows:

### **AOC 1 - Suspect Filled Area (Former Spar Mill Pond)**

According to CTDEP and CTDOT files, a suspect landfill area was located on the western section of the subject site. These files state that this area of the property has historically been investigated as a potential source of soil contamination as well as area wide ground water contamination due to dumping activities that have occurred since the garage was established in approximately 1941. Previous to approximately 1941, this area contained the Spar Mill Pond.

### **AOC 2 - Floor Drains and Conveyance System**

Two catch basins and several capped and uncapped floor drains are located at the subject site. The catch basins and all capped floor drains located at the subject site discharge(ed) directly to Candlewood Hill Brook. All floor drains that are not capped (i.e., floor drain located in the boiler room of Building 81-115) reportedly discharge to the on-site septic tank.

### **AOC 3 - Hydraulic Lift Area**

An aboveground hydraulic lift was observed within a central vehicle repair bay area. An inground lift was formerly located in the area of the current aboveground lift. Reportedly, a small amount of contaminated soil was removed from this area during the installation of the aboveground lift. According to a CTDEP spill report dated August 14, 1998, approximately 70 gallons of hydraulic oil was discharged from a hydraulic lift located within one of the repair garages. Reportedly, approximately 7.5 gallons of the 70 gallons reached the subsurface soil. It is likely that this area is where the reported discharge occurred.

### **AOC 4 - Former Solvent Storage Area**

A report titled Draft Phase I Grab Sampling/Geophysical Report, ConnDOT Hazardous Waste Site Investigation Study (Pages II-142-II-148) dated October 1985, prepared by Fred C. Hart Associates, Inc. of Meriden Connecticut, indicated that a solvent storage area was present within the current vehicle and equipment compound area.

### **AOC 5 - Former Steam Cleaning Area**

A report titled Draft Phase I Grab Sampling/Geophysical Report, ConnDOT Hazardous Waste Site Investigation Study (Pages II-142-II-148) dated October 1985, prepared by Fred C. Hart Associates, Inc. of Meriden Connecticut, indicated that a steam cleaning area was present south of Building 81-106.

#### **AOC 6 - Area of Historic Solvent Odor**

A report titled Draft Phase I Grab Sampling/Geophysical Report, ConnDOT Hazardous Waste Site Investigation Study (Pages II-142-II-148) dated October 1985, prepared by Fred C. Hart Associates, Inc. of Meriden Connecticut, reported a solvent odor northwest of Building 81-106.

#### **AOC - 7 Utility Pit**

A utility pit was located in a central bay area located in Building 81-115. This pit was reported to contain various underground hoses (air), wires and pipes associated with on-site hydraulic and electrical systems which travel between Building 81-115 and 81-106.

#### **AOC 8 - UST Area East of Building 81-106**

An area containing several former and present USTs containing gasoline, diesel, and heating oil is located adjacent to the east of Building 81-106

#### **AOC 9 - UST Area North of Building 81-106**

An area containing a former and present UST containing waste oil is located adjacent to the north of Building 81-106.

#### **AOC 10 - UST Area North of Building 81-115**

An area containing a former and present UST containing heating oil is located adjacent to the north of Building 81-115.

#### **AOC 11 - Former Central UST Area**

An area containing a former gasoline UST was located centrally of Building 81-106 and Building 81-115.

#### **AOC 12 - Former Forge Shop**

According to Sanborn Fire Insurance Maps dated 1901, 1908, and 1914, and a Town of Haddam survey map of the subject site dated April 1941, a factory building, constructed of wood, identified as a Forge Shop, was located in the area of the vehicle and equipment compound area.

This building contained an earthen floor, turbine and tail race. According to aerial photographs, this wooden building was likely demolished sometime in the 1940s.

#### **AOC 13 - Septic Tank and Leach Field**

One septic tank is located adjacent to the east of Building 81-115 beneath an asphalt paved parking area. This tank is currently in use.

#### **AOC 14 - Area of Former Drum Storage**

A report titled Draft Phase I Grab Sampling/Geophysical Report, ConnDOT Hazardous Waste Site Investigation Study (Pages II-142-II-148) dated October 1985, prepared by Fred C. Hart Associates, Inc. of Meriden Connecticut, indicated that an area of former drum storage was present north of two wooden sheds located on the western section of the subject site.

Marin recommends that a Phase II Environmental Site Assessment be conducted at the site to determine if a release has occurred or to further delineate releases at the identified AOCs. This investigation would include the sampling of respective media for the contaminants of concern for evidence of a past release to the environment. A Phase II work plan should be developed detailing these efforts including the objectives of the investigation, locations of sampling points, sampling methods, analytical methods, and a description of the site conceptual model.

## 7.0 REFERENCES

Connecticut Department of Environmental Protection, List of Property Transfer Filings under the Connecticut Transfer Act, updated to April 2, 1998.

Connecticut Department of Environmental Protection, Water Compliance Unit, "Leachate and Wastewater Discharge Sources Inventory for the Lower Connecticut River Basin," December 1993.

Connecticut Department of Environmental Protection, Water Compliance Unit, "Water Quality Classifications for the Lower Connecticut River Basin," April 8, 1997.

U.S. Geological Survey, Bedrock Geological Map of Connecticut, 1985

U.S. Geological Survey, Surficial Materials Map of Connecticut, 1992

VISTA StarView Databases and Sources:

NPL: National Priority List, January, 2000.

CERCLIS: Comprehensive Environmental Response Compensation and Liability Information System, October, 1999.

RCRIS: Resource Conservation and Recovery Information System, December, 1999.

ERNS: Emergency Response Notification System, August, 1999.

State Priority Sites: Inventory and Suspected Hazardous Waste Sites, November, 1999.

SCL: State Site Discovery and Assessment, November, 1999.

Spills: The Department of Environmental Protection Agency's database of emergency response actions and spill releases maintained by the Oil and Chemical Spill Response Division of the Bureau of Waste Management, updated quarterly.

Solid Waste Landfills: The Department of Environmental Protection Agency's database of active solid waste landfill facilities maintained by the Solid Waste Program of the Bureau of Waste Management, January, 2000.

UST: Underground Storage Tanks. The Department of Environmental Protection Agency's database of registered underground storage tanks maintained by the Underground Storage Tank Enforcement Program of the Bureau of Waste Management, January, 2000.

LUST: Leaking Underground Storage Tanks. The Department of Environmental Protection Agency's database of leaking underground storage tanks maintained by the Underground Storage Tank Enforcement Program of the Bureau of Waste Management, June, 1999.

**Agencies**

Connecticut Department of Environmental Protection, Oil and Chemicals Spills Unit, public files.

Connecticut Department of Environmental Protection, Water Management Bureau public files.

Connecticut Department of Environmental Protection, Waste Management Bureau public files.

**Town of Haddam:**

Tax Assessor  
Tax Collector  
Engineering Department (Land Use Department)  
Planning & Zoning (Land Use Department)  
Fire Marshal's Office (Land Use Department)  
Health Department (Land Use Department)

**Interviews**

Mr. Manuel Diaz-Rivera, Garage Supervisor, Connecticut Department of Transportation, Higganum Repair Garage

## 8.0 LIMITATIONS

This report was completed by Marin Environmental, Inc. (Marin) for the sole use of the Town of Haddam, in connection with an assessment of on-site environmental conditions. Use of the report by any other person for any other purpose is not authorized except with the prior written consent of Marin.

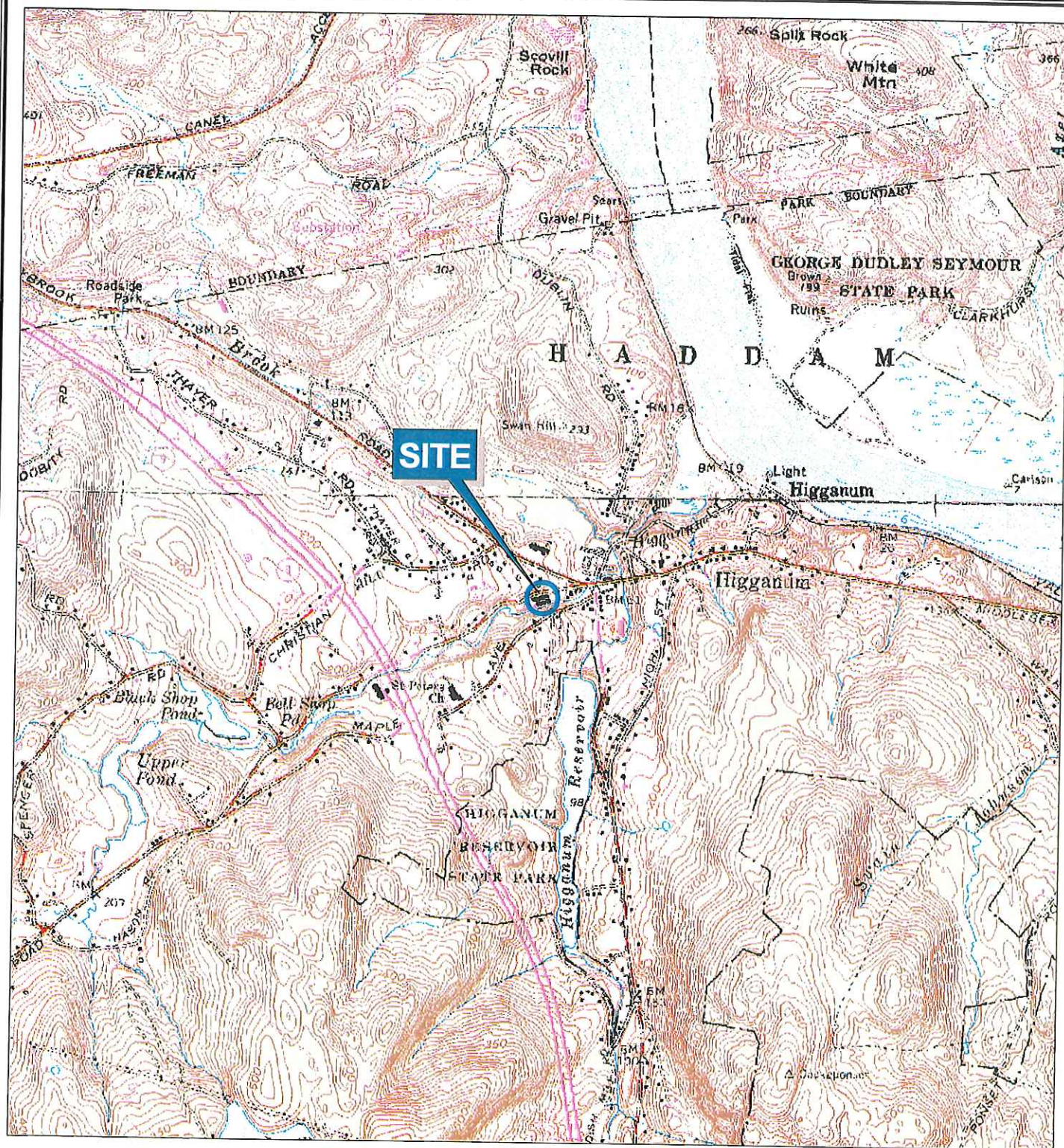
The scope of work conducted did not include a facility compliance audit with respect to local, state or federal laws and regulations. The work was undertaken to assess environmental conditions specifically on the subject property in accordance with generally accepted engineering and hydrogeological practices.. No other warranty, express or implied, is made. Absolute assurance that any and all possible contamination at the site was identified cannot be provided.

The report conclusions are based, in part, on information provided by the client, their agents, or third parties, including State or local officials. Marin assumes no responsibility for the accuracy and completeness of this information.

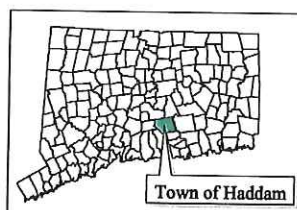
Where visual observations are included in the report, they represent conditions at the time of the inspection, and may not be indicative of past or future site conditions.

The scope of work completed for this assessment did not include the sampling and chemical testing of soils, sediment, septic liquid or sludge, surface water, ground water, polychlorinated biphenyls (PCBs) containing fluids, potential asbestos-containing building materials (ACBM) or lead based paint.





2000 0 2000 Feet



MAP TAKEN FROM THE 7.5 MINUTE USGS TOPOGRAPHIC MAPS OF THE HADDAM AND MIDDLE HADDAM QUADRANGLES, 1961 (PHOTOS REVISED 1971 AND 1984, RESPECTIVELY).

# MARIN

ENVIRONMENTAL  
7 ISLAND DOCK ROAD, HADDAM, CT 06438

FIGURE 1  
SITE LOCATION MAP

DEPARTMENT OF TRANSPORTATION  
HIGGANUM REPAIR GARAGE  
11 CANDLEWOOD HILL ROAD  
HIGGANUM, CONNECTICUT

JULY 2000

FILE NO: 99-0474-01