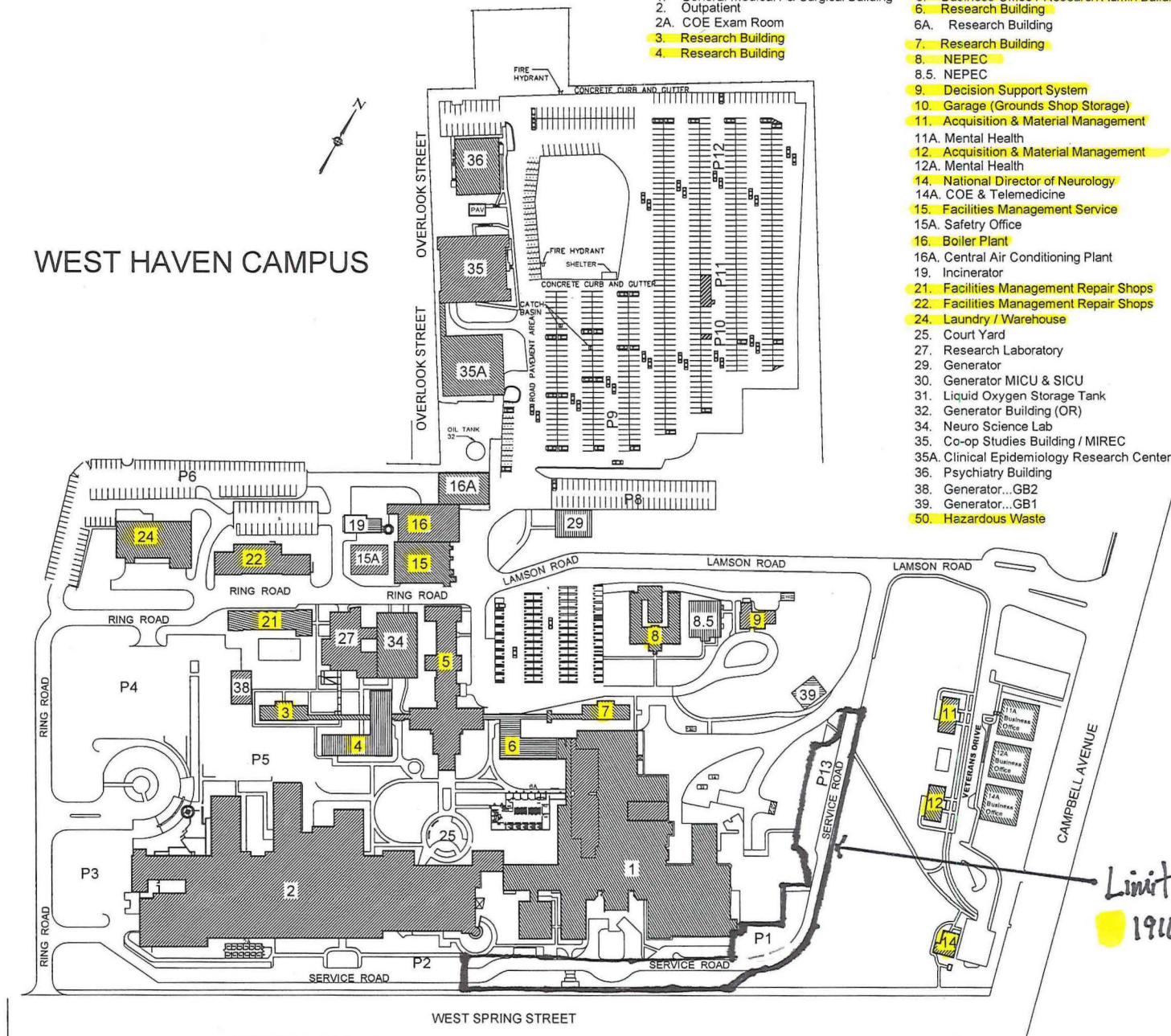


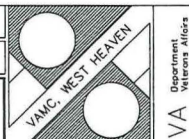
WEST HAVEN CAMPUS



- ## Building Key
- 1. General Medical / & Surgical Building
 - 2. Outpatient
 - 2A. COE Exam Room
 - 3. Research Building
 - 4. Research Building
 - 5. Business Office / Research Admin Building
 - 6. Research Building
 - 6A. Research Building
 - 7. Research Building
 - 8. NEPEC
 - 8.5. NEPEC
 - 9. Decision Support System
 - 10. Garage (Grounds Shop Storage)
 - 11. Acquisition & Material Management
 - 11A. Mental Health
 - 12. Acquisition & Material Management
 - 12A. Mental Health
 - 14. National Director of Neurology
 - 14A. COE & Telemedicine
 - 15. Facilities Management Service
 - 15A. Safety Office
 - 16. Boiler Plant
 - 16A. Central Air Conditioning Plant
 - 19. Incinerator
 - 21. Facilities Management Repair Shops
 - 22. Facilities Management Repair Shops
 - 24. Laundry / Warehouse
 - 25. Court Yard
 - 27. Research Laboratory
 - 29. Generator
 - 30. Generator MICU & SICU
 - 31. Liquid Oxygen Storage Tank
 - 32. Generator Building (OR)
 - 34. Neuro Science Lab
 - 35. Co-op Studies Building / MIREC
 - 35A. Clinical Epidemiology Research Center & Veterans Aging Cohort Study
 - 36. Psychiatry Building
 - 38. Generator...GB2
 - 39. Generator...GB1
 - 50. Hazardous Waste

FIGURE 3

Drawing Title SITE PLAN		projectile AS-BUILT Drawings		Date 03-15-2005	
Approved:		Building Number		Project No.	
Approved:		Checked		Drawing No.	
Approved:		Location VAMC, WEST HEAVEN CONN.			





Abbreviated Preliminary Assessment Report

West Haven Campus
950 Campbell Avenue
West Haven, CT 06516

206906.00

Veterans Affairs
Connecticut Healthcare
System,

July 2013

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FACILITY INFORMATION

TOPIC	INFORMATION
Facility Name	Veterans Affairs Connecticut Healthcare System West Haven Campus
Facility Location/Mailing Address	950 Campbell Avenue, West Haven, CT 06516
Main Telephone Number	203-932-5711
County	New Haven
Facility Operations	Medical Center
NAICS Code/SIC Code	622110 / 8062
Owner/Operator	Department of Veterans Affairs
Longitude/Latitude	41°17' 2.04"N; 72° 57' 36.36"W
EPA Registry ID	CTP000017522
Hazardous Waste Generator ID No.	CT5000001545

EXECUTIVE SUMMARY

Woodard & Curran, Inc. was retained by the Veterans Affairs Connecticut Healthcare System (VACHS) to conduct a Preliminary Assessment (PA) of their West Haven medical center campus. The PA is required because the West Haven campus was listed on the United States Environmental Protection Agency's (EPA's) Federal Agency Hazardous Waste Compliance Docket. The campus was listed because its hazardous waste generator status changed from small quantity generator (SQG) to large quantity generator (LQG) in 2008. The facility's LQG status is largely attributable to the disposal of waste pharmaceuticals that are regulated as P-listed wastes. However, the potential release of waste pharmaceuticals poses virtually no risk to human health or the environment.

Woodard & Curran evaluated the campus for evidence of hazardous substances or conditions that indicate an existing release, a past release, or a material threat of release into structures, soils, groundwater, surface water, or sediments at the campus that could pose a threat to human health, safety and/or the environment. The PA included a site walkover; research of historical records regarding past ownership and uses of the property; a review of local, state and federal environmental records related to the site and nearby properties that have a potential to impact the site; and interviews with persons knowledgeable of current and past facility operations, chemical and waste management practices, and release history.

A variety of hazardous substances are stored and used on campus, including: pharmaceuticals, cleaners, lubricants, building and equipment maintenance chemicals, and paints in relatively small quantities (e.g. in containers with a capacity not exceeding 5-gallons).

The West Haven campus generates and accumulates hazardous waste at the point of generation in approximately 73 satellite accumulation areas (SAAs) located throughout the campus, and stores hazardous waste in one 90-day hazardous waste Main Accumulation Area (MAA) located in Building 50. All storage locations are indoors, with restricted access, and have adequate secondary containment to ensure a hazardous substance liquid release will not enter the environment.

The campus maintains diesel fuel and No. 2 fuel oil in aboveground and underground storage tanks. Underground storage tanks (USTs) include one 500-gallon, one 2,000-gallon, one 10,000-gallon, and two 12,000-gallon USTs, each of which contain diesel fuel. Aboveground storage tanks (ASTs) include five 100-gallon ASTs and individual 25-gallon, 150-gallon, 400-gallon, 500-gallon, and 2,000 gallon ASTs, all of which contain diesel fuel, and one 120,000-gallon AST which contains #2 fuel oil as back-up heating oil supply to the Boiler Plant. All USTs are double-walled with interstitial leak monitoring meters, and all ASTs have appropriate secondary containment.

In addition to oil stored in tanks, the VA stores used/waste oil in 55-gallon drums and operates a variety of oil-filled electrical and operating equipment throughout the West Haven campus such as transformers, hydraulic elevators and trash compactors. While petroleum releases represent a potential liability, petroleum products are not regulated under CERCLA and cannot provide the basis for a Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) listing.

Based on the information obtained and evaluated as part of the PA, there is no evidence of a hazardous substance release from or at the site other than the historic leaking USTs which have been investigated and remediated according to applicable state regulations. There is very little chance that a future release at the site could pose a substantial threat to human health, safety or the environment. This conclusion is based on observations made during the site reconnaissance, review of the Connecticut Department of Energy and Environmental Protection (CTDEEP) online sites database, review of federal environmental

databases, and other information as described below.¹ Because the site does not pose a threat, this Abbreviated Preliminary Assessment Report (APA) recommends that No Further Action be taken and the site be withdrawn from the CERCLIS list.

¹ While a review of the CTDEEP online sites database reveals that there have been several fuel releases at the site, petroleum releases cannot provide the basis for a CERCLIS listing, as noted above.

1. INTRODUCTION

1.1 BACKGROUND

Woodard & Curran, Inc. was retained by the Veterans Administration Connecticut Healthcare System (VACHS) to conduct a Preliminary Assessment (PA) of its West Haven medical center campus. The PA was required because the campus has been listed on the United States Environmental Protection Agency's (EPA's) Federal Agency Hazardous Waste Compliance Docket (Docket). The campus was listed because its hazardous waste generator status changed from Small Quantity Generator (SQG) to Large Quantity Generator (LQG) in 2008. As a federal facility listed on the Compliance Docket, the VACHS is required to perform a PA of the West Haven campus to evaluate the potential release or the threat of a release(s) of hazardous substances to the environment from the site.

1.2 REGULATORY OVERVIEW

1.2.1 Preliminary Assessment Process Summary

The PA process is used by the EPA to evaluate the potential for a release of a hazardous substance from a site to pose a risk to human health and the environment. The purpose of the PA is to differentiate sites that pose little or no potential threat to human health and the environment from sites that potentially pose a significant risk and warrant further investigation. The three phases of a PA, as outlined in EPA guidance, are:

1. CERCLA Eligibility Evaluation
2. Initial Site Evaluation
3. Completion of Full PA

See: EPA Publication #9375.2-09FS Site Assessment: "Improving Abbreviated Preliminary Assessments" (October 1999).

The CERCLA Eligibility Evaluation involves collecting and reviewing readily available documentation to evaluate the eligibility of the site under CERCLA. Collecting this information may begin before EPA enters the site into the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), as part of a pre-CERCLIS screening assessment. The Initial Site Evaluation entails gathering information through file searches in available federal, state, and local databases. This may involve visiting the site to evaluate potential risks and determine if action is necessary.

If after the first two phases, the information suggests the site does not pose a threat of hazardous substance release and no further investigation is necessary, an Abbreviated Preliminary Assessment (APA) Report may be completed. The abbreviated screening process, in certain circumstances, can indicate whether a site can be removed from the Docket without the need to perform a full PA. An APA gathers the same type of information that is gathered through the comprehensive PA approach, but relies on professional judgment and past site assessment experience to make decisions about a site at earlier stages in the process through the completion of the APA checklist.

A full PA is undertaken when the first two phases do not yield a clear decision for the investigator. The PA utilizes a compressive set of score sheets to evaluate the site along four potential exposure pathways; groundwater, surface water, soil exposure, and the air pathway to determine if the site poses any hazard to the environment. The score sheets quantitatively measure the potential environmental impacts from a hazardous substance release utilizing a modified version of the Hazard Ranking System (HRS) developed

by the EPA to evaluate sites for possible inclusion on the National Priorities List (NPL). The NPL includes those sites that appear to pose the most serious threat to public health or the environment, and are eligible for Superfund financed remedial action. Depending on the score received at the completion of the PA, a site can receive a No Further Remedial Action Planned (NFRAP) designation or be recommended for inclusion on the NPL.

1.3 WEST HAVEN ABBREVIATED PRELIMINARY ASSESSMENT DETERMINATION

EPA Publication #9375.2-09FS outlines the following three typical situations in which an APA can be completed in lieu of the full PA, provided all of the objectives of the full PA are met:

1. The site has been improperly listed on the CERCLIS docket, either because it is not eligible or it could be deferred to another program,
2. Available information allows the investigator to make an early decision to move on to a combined PA/Site Investigation, a Site Investigation, or another Superfund Investigation, or
3. A NFRAP decision can be made without undertaking a full PA.

Based on the information obtained during the first two phases of this PA, it was determined that there has not been a hazardous substance release at or from the site, and the site does not pose a significant threat of future hazardous substance releases that could threaten human health and the environment. Therefore, this APA report was prepared to document the NFRAP determination.

2. ABBREVIATED PRELIMINARY ASSESSMENT

2.1 ABBREVIATED PRELIMINARY ASSESSMENT PROCESS

This APA was performed in accordance with EPA Publication #9375.2-09FS and consists of the following four components:

1. Records review,
2. Site reconnaissance,
3. Interviews, and
4. APA report.

2.1.1 Records Review

The records review for the West Haven campus included a review of the following federal, state, and local databases as maintained by EPA and the CTDEEP:

Federal Databases

- NPL Database;
- De-listed NPL Database;
- EPA ENVIROFACTS Database
- CERCLIS list;
- CERCLIS NFRAP List;
- Resource Conservation and Recovery Act (RCRA) Corrective Action Report (RCRA-CORRACTS) list;
- RCRA Non-CORRACTS Treatment Storage and Disposal (TSD) list;
- RCRA generators list;
- Institutional Control/Engineering Control registries; and
- Emergency Response Notification System list.

State Databases

- CT SDADB List
- CT DEEP Landfill/Solid Waste Disposal Sites list
- Voluntary Cleanup Sites;
- Brownfield sites list;
- CTDEEP LUST Database; and
- CTDEEP UST Database.

To evaluate cultural and natural resources, Woodard & Curran reviewed online databases maintained by the CT DEEP to assess cultural resources, ecological resources, and wetlands in proximity to the West Haven Campus.

To evaluate the physical setting of the campus, Woodard & Curran reviewed the following sources:

- United States Geological Survey (USGS) topographic maps;
- CTDEEP GIS Data;
- Aerial photographs; and
- Local soil, geologic, surface water, and groundwater information.

To evaluate the current and historic use of the campus, Woodard & Curran reviewed the following sources:

- Current and historic topographic maps;
- Current and historic aerial photos;
- Sanborn Fire Insurance Maps;
- Street directories;
- Local records including information available from the local Building, Health, and Assessor Departments; and
- Previous environmental reports, regarding the facility's compliance with applicable programs.

2.1.2 Site Reconnaissance

Woodard & Curran conducted a one-day visual inspection of the campus to identify the presence or absence of hazardous materials, and to observe evidence of actual or threatened releases of hazardous substances. The site reconnaissance included an inspection for the presence of:

- Hazardous substances and petroleum products storage;
- USTs and/or ASTs;
- On-site sewage disposal systems, pits, ponds, and lagoons;
- Hydraulic or electrical equipment potentially containing polychlorinated biphenyls;
- Stressed vegetation, stained soils, or odors that may be indicative of waste management practices;
- Waste management, including wastewater, solid waste, and hazardous waste;
- Groundwater wells;
- Topography, drainage, and buildings; and
- Adjacent property characteristics obtainable from the campus and publicly accessible locations.

2.1.3 Interviews

Woodard & Curran interviewed the following individuals and/or entities with actual or constructive knowledge of current and/or past uses of the campus and adjacent properties:

- Property owner or representative of the owner:
 - Ling Xu, GEMS Coordinator
- Building occupants:

- Laboratory, Clinic, and Pharmacy Personnel in Buildings 1 and 2
- Facilities Staff in workshops, utility rooms, and garages
- State and/or local government officials:
 - Paul Fernald, Chief Sanitarian, City of West Haven.
 - Health Department, City of West Haven

2.1.4 Report

This APA report includes documentation to support the findings, opinions, and conclusions obtained by Woodard & Curran. Specifically, as required by the EPA's APA guidance, this report includes a discussion of any known releases at the campus, the nature of any releases, and whether further action is warranted. In order to come to a determination in regards to further action, the report includes a discussion of the local environment, potential migration pathways, human and environmental targets, and a description of the history and nature of the waste handling practices employed at the site.

2.2 SIGNIFICANT ASSUMPTIONS

Woodard & Curran made the following assumptions:

- The information obtained from the VACHS, individuals interviewed, and prior environmental reports, was considered to be accurate.
- The information provided by the environmental records database vendor and other public record sources is complete and accurate.
- Conditions observed at the campus were assumed to be representative of areas that were not accessible unless otherwise noted.

3. SITE BACKGROUND

3.1 SITE LOCATION AND LEGAL DESCRIPTION

The West Haven Campus is located at 950 Campbell Avenue in West Haven, Connecticut. West Haven is city of 11 square miles, and is part of New Haven County. The property is currently owned and occupied by the VA Connecticut Healthcare System, under the authority of the U.S. Department of Veterans Affairs. The geographic coordinates for the site are 41° 17' 2.04" N latitude and 72° 57' 36.36" W longitude. Figure 3-1 depicts the property location and Figure 3-2 provides a detailed illustration of the campus facilities.

3.1.1 Site and Vicinity Characteristics

West Haven is one of two VA Connecticut Healthcare System medical center campuses, and occupies a 47.34-acre parcel in central West Haven. The topography of the site is relatively level, with the exception of the northeastern portion of the campus that slopes steeply toward Campbell Avenue. A majority of the campus is covered by impervious surfaces such as buildings, parking areas, and roadways.

The West Haven campus is comprised of approximately 40 buildings consisting of hospital facilities, office buildings, facilities/maintenance buildings, and storage buildings. The hospital facilities are mostly contained within the multi-story Building 1 (General Medical and Surgical Building) and Building 2 (Outpatient Services).

The parcel is bordered on all sides by the following:

- North:** Mixed residential (singles and multi-family), and Notre Dame High School;
- South:** Mixed residential (singles and multi-family);
- East:** Mixed residential (singles and multi-family), Commercial (offices, local retail, light industrial);
- West:** Mixed residential (singles and multi-family), Commercial (offices, local retail, light industrial).

No stressed vegetation was observed on or around the site, and no standing water was visible during the site visit. The northern and western portions of the property are fenced, and the fencing appears to be in good conditions. All of the hazardous waste accumulation and storage areas were secured, protected from the elements, and provided with secondary containment. These precautions adequately prevent any hazardous waste releases from leaving the buildings and potentially impacting the environment.

3.1.2 Site Ownership History

The U.S. Department of Veterans Affairs acquired the land in approximately 1920 (between 1917 and 1924; the exact date of acquisition was not listed in the Assessor's Card nor on the deed). The first buildings on the property were constructed in 1915 and 1916, with the first large multi-story hospital building being added in 1949. The second large multi-story hospital building and several other facilities were constructed in 1952. Additional buildings have been added periodically since that time.

The initial facility was originally constructed as the General Hospital Society of Connecticut – Tuberculosis Annex according to the 1917 Sanborn Fire Insurance map, but was incorporated into the United States Veteran Hospital system by the time of the 1924 Sanborn map. According to site

representatives, the property has been used for a hospital related activities, including health and wellness, research, storage, and maintenance activities, since initial construction.

3.1.3 Environmental Permits and/or Violations

The West Haven campus became a LQG of hazardous waste in 2008, and operates under EPA ID Number CT5000001545. Large quantity generators of hazardous waste in Connecticut are required to ensure that their wastes are managed, stored, and transported off-site in accordance with all applicable requirements.

West Haven operates its air emissions sources under CTDEEP's General Permit to Limit Potential to Emit from Major Stationary Sources of Air Pollution (GPLPE), and the facility operates under AIRS ID number 11001730645. Monthly and rolling 12-month emissions are tracked by West Haven to demonstrate compliance with the applicable GPLPE limits. West Haven is also subject to several of CTDEEP's Air Pollution Control Regulations as well as EPA's New Source Performance Standards (NSPS), National Emissions Standards for Hazardous Air Pollutants (NESHAP) and Protection of Stratospheric Ozone programs.

According to the EPA Envirofacts database, the campus has not had any formal RCRA enforcement actions in at least the last five years. Two written informal violations were noted; the enforcement disposition for both these violations is Action Satisfied/Case Closed. A copy of the Environmental Compliance History Online (ECHO) report from the Envirofacts database is included in Appendix D.

While the EPA Envirofacts database does not list any violations within the last five years, the CTDEEP maintains a site database that lists all reportable releases. This database identified nineteen releases at the campus. Detailed reports for each spill are included in the EDR Report in Appendix E.

Table 3-1: CTDEEP Reportable Release History

Date of Spill	Material Spilled	Qty	Units	Emergency Measure	Status
5/17/2012	Gasoline	1	Gallon	Sanded	Closed
10/3/2012	ETO GAS	0	Gallon	Fire department notified	OPEN
7/27/2012	Alarm - Ethylene Oxide (Sterilization Area)	0		Equipment shut down, Staff was evacuated, West Haven FD cleared area.	Closed
7/16/2012	R-22 Freon	0	Gallon	Shut off line	Closed
10/19/2011	R-22 Freon	0	Gallon	Possible refrigerant discharge to sanitary sewer	Closed
9/21/2011	Hydraulic Oil	0.25	Gallon	Speedi-dry	Closed
5/6/2011	Battery Acid	1	Gallon	Speedi-dry	Closed
11/23/2010	Fluorescent light bulb	0	Gallon	Triumvirate Inc. on scene when light broke, cleaned	Closed
6/28/2010	Motor Oil	0.5	Gallon	Speedi-dry	Closed
11/17/2009	Hydraulic Oil	<1	cup	Cleaned	Closed
8/13/2009	Propylene Glycol	2	Gallon	approx. 6 quarts, cleaned	Closed

Date of Spill	Material Spilled	Qty	Units	Emergency Measure	Status
11/19/2008	Poly-Aromatic Hydrocarbons	0	Gallon	Removed tanks	Closed
10/24/2008	Hydraulic Oil	1	Gallon	Speedi-dry & absorbent	Closed
7/18/2008	Hydraulic Oil	1	Gallon	Speedi-dry, contractor retained	Closed
7/14/2008	Roofing Tar	1	Gallon	Roofing tar, greenlock membrane adhesive, cleaned	Closed
1/2/2007	Hydraulic Oil	8	Gallon	Sanded & absorbent pads	Closed
3/10/1998	Gasoline	5	Gallon	Speedi-dry, contractor retained (Earth Tech.)	Closed
5/20/1997	Sewage	300	Gallon	Sewage pipe broke, loss 300+ gallons, cleaned	Closed
2/27/1996	Not reported	100	Gallon	Not reported	Not reported

According to the CTDEEP database, the majority of these reportable releases at the subject property have been small quantities of primarily petroleum products, and do not represent significant environmental concern to the property.

Three additional releases due to leaking underground storage tanks have also been reported to the CT DEEP. These releases are detailed in Section 4.1.2.

The federal CERCLA program does not regulate petroleum releases. Rather, these releases are regulated under state rules or different federal rules and cannot provide a basis for listing a site on the federal docket or the CERCLIS.

3.2 SOURCE CHARACTERIZATIONS

3.2.1 Potential Release Source Descriptions

Based on the amount of acutely hazardous waste generated on a monthly basis, West Haven is registered and operating as a LQG of hazardous waste. The facility operates under EPA ID # CT5000001545. Hazardous wastes is generated and accumulated in approximately 73 Satellite Accumulation Areas (SAAs) in clinical and research laboratories, the pharmacy, patient care areas, and facilities shops throughout the facility. Hazardous waste generated throughout the West Haven campus is collected by Triumvirate Environmental, Inc. (TEI) and transported to a trailer parked at the east end of the General Medical & Surgical Building (Building 1). Here the waste is packaged for storage prior to being transported off site for disposal by a licensed hauler. The trailer remains locked at all times and only EMS personnel have keys. Triumvirate also manages the disposal of non-hazardous chemical and pharmaceutical wastes. Hazardous waste accumulated in SAAs throughout the campus are generally collected weekly and moved to the main hazardous waste accumulation area (MAA) located in Building 50. Building 50 is an explosion-proof steel bunker located adjacent to Building 1 that has four separate storage bays, each secured by a locked door. The storage bays are identical in size and construction, and are equipped with a raised steel grate floor which provides secondary containment in the event of a release. Three of the storage bays are used for waste and the fourth is used for supplies. Keys to the area

are maintained by the Green Environmental Management Systems (GEMS) Coordinator, the Industrial Hygienist, the Safety Officer, and TEI. TEI is a private licensed waste hauler (EPA ID MAD985286988) that has been contracted by the VA to perform the following services:

- Weekly inspections of the SAAs and Hazardous Waste Storage trailer,
- Transport waste from the SAAs to the Hazardous Waste Storage trailer A and package the waste prior to shipment,
- Transport accumulated wastes to a licensed Treatment, Storage, and Disposal Facility (TSDF).

The SAAs are located throughout many of the non-office buildings and are primarily located within locked laboratories, storage rooms, or maintenance shops. The typical SAA setup consists of a single plastic container, typically of 2- to 5-gallon size, stored within a plastic basin which is designed to provide secondary containment in the event of a spill or accidental release. The majority of the medication hazardous waste is generated in the two pharmacies on the campus. Each pharmacy has its own SAA; these pharmacy areas are secured by a locked door equipped with a card reader. Access to the pharmacies is restricted to authorized personnel, and all non-pharmacy personnel must be granted access by the pharmacy staff. These SAAs consist of individual plastic basins for each waste generated in the pharmacy. The majority of the wastes generated in the pharmacy are expired pharmaceuticals which are either P- or U- listed wastes. A complete list of the SAAs on the West Haven campus is included in Appendix C; a list of commonly used pharmaceuticals and disposal guidelines which is typically posted in SAAs is also included in Appendix C.

Regulated medical waste (RMW) generated throughout the West Haven campus is collected by V.A. housekeeping personnel, and is stored in a walk-in refrigerator near the Building 1 loading dock, adjacent to Building 50. Stericycle, a medical waste contractor, manages the pickup and disposal of the RMW on a weekly basis.

3.2.1.1 Waste Quantity and Source Size

Hazardous materials and petroleum products were observed in various locations throughout the facility. No evidence of leakage of hazardous materials and/or petroleum products was observed at the time of the site reconnaissance.

Hazardous substances and petroleum products stored in the garages and offices occupied by the Maintenance and Facilities Departments included:

- Lubricating oil;
- Spray lubricants;
- Spray adhesives;
- Paints and stains, including interior, exterior, and field marking paints (only water-based latex paints are generally used);
- De-icer;
- Motor oil;
- Machine oil;
- Solvents, including denatured alcohol, paint thinner, degreaser;
- Cleaners and maintenance chemicals;

- Water treatment chemicals
- Propane (including a large propane cylinder outside the building); and
- Gasoline, Diesel, and No. 2 Fuel Oil.

These materials were generally present in one-quart to 5-gallon containers, and were stored in dedicated flammables cabinets as appropriate. 55-gallon drums of used/waste oil and oily rags were noted in the chiller plant.

The campus maintains diesel fuel and No. 2 fuel oil in aboveground and underground storage tanks. Underground storage tanks (USTs) include one 500-gallon, one 2,000-gallon, one 10,000-gallon, and two 12,000-gallon USTs, each of which contain diesel fuel. Aboveground storage tanks (ASTs) include five 100-gallon ASTs and individual 25-gallon, 150-gallon, 400-gallon, 500-gallon, and 2,000 gallon ASTs, all of which contain diesel fuel, and one 120,000-gallon AST which contains #2 fuel oil as back-up heating oil supply to the Boiler Plant. UST locations and significant features are detailed on additional figures presented as Appendix F.

In addition to oil stored in tanks, the VA stores used/waste oil in 55-gallon drums and operates a variety of oil-filled electrical and operating equipment throughout the West Haven campus such as transformers, hydraulic elevators and trash compactors. The locations of these tanks are indicated on Figure 3-2. The campus also stores waste motor oil in 55-gallon drums located in the Boiler Plant. The materials were stored in appropriate containers with no evidence of leakage.

Hazardous substances stored in the Pharmacy and Lab portions of Building 1 and 2 included, but may not be limited to:

- Epinephrine;
- Nicotine;
- Acetone;
- Ethanol;
- Propanol;
- Xylene;
- Alcohol;
- Methanol;
- Lidocaine;
- Osmium tetroxide;
- Hydrochloric Acid;
- Mercury compounds;
- Perchloric Acid;
- Hypochlorite Solution.

These materials were generally present in one-quart to 5-gallon containers. Many containers were stored within a yellow flammables cabinet. The materials were stored in appropriate containers and no evidence of leakage was observed.

A review of the facility's hazardous waste shipping manifests indicates a wide range in the nature and volume of material shipped out for treatment and disposal. As of this report, the amount of hazardous waste shipped ranged from 1 to 3,920 pounds per shipment. The majority of the wastes shipped consist of F-listed or characteristic waste such as waste ethanol, or acetone. The remainder of the wastes was U and P-listed wastes generated in the pharmacy and laboratories. The quantity of P-listed wastes generated or accumulated at any one time occasionally exceeds 2.2 pounds, which is the reason the campus recently changed its generator status from SQG to LQG.

3.2.2 Evidence of Hazardous Pollutants or Contaminants

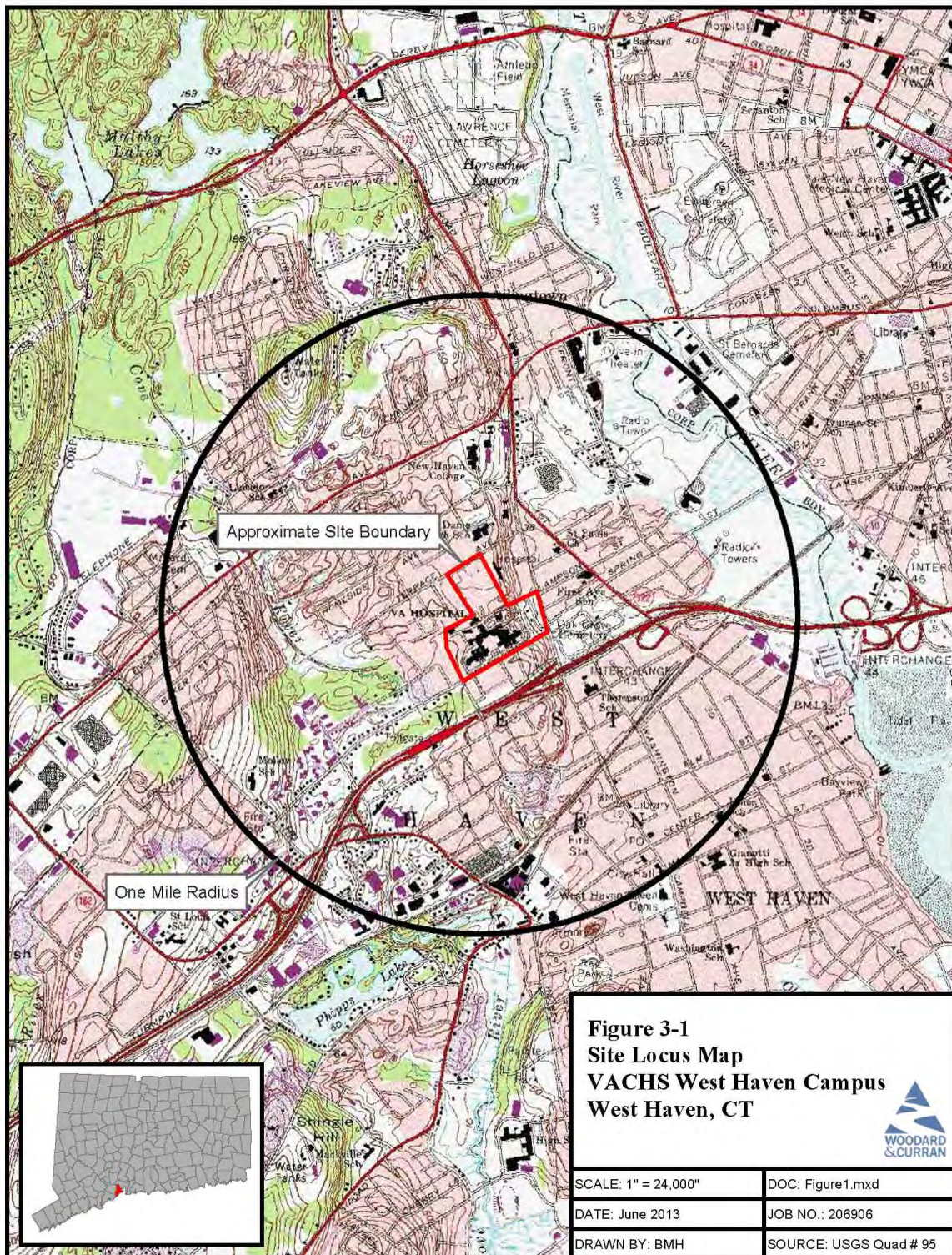
No soil staining or stressed vegetation relating to a potential release of hazardous substances or petroleum products was observed or reported at the subject property. Small stains were observed within maintenance facilities and garages and on the pavement adjacent to these facilities typical of parking areas and roadways. No threat is posed to human health and the environment by these surficial stains.

3.2.3 Source Containment Features

As described above, hazardous wastes are accumulated in the SAAs and stored in the MAA. These areas are either locked or attend by trained personnel. All accumulation and storage areas are provided with secondary containment to prevent releases from entering the environment.

All VACHS employees are issued photo identification badges and are required to keep their identification badge visible at all times. The identification badges also serve as key cards providing controlled access to areas of the campus secured by key card readers. The VACHS also maintains Police/Security Officers who patrol the campus 24 hours a day, seven days a week.

Figure 3-1 One-Mile Locus



4. MIGRATION/EXPOSURE PATHWAYS AND TARGETS

4.1 GROUNDWATER MIGRATION PATHWAY

4.1.1 Local Geography and Hydrologic Setting

The predominant soil type in the area of the subject property is classified as primarily Udorthents-Urban Land, with some Udorthents – smoothed, and Cheshire-Urban land complex areas as well. The soils receive the Udorthents-Urban Land classifications because 85% or more of the land is covered by an impermeable surface and the native soil has been removed and filled with artificial soil material. Native surficial material is largely till. Borings performed at the subject property demonstrate a depth to bedrock of 8- to 16-feet, and a depth to groundwater of 5- to 15-feet bgs. Bedrock is defined as primarily Oronoque Schist, gray to silver, medium- to fine-grained schist and granofels, of the Iapetos (Oceanic) terrane/Connecticut Valley Synclinorium/Orange Milford Belt.

There are no surface waters or water supply wells present on the campus. The closest aquifer protection area to the subject property is located within the towns of Derby and Shelton approximately 8.3 miles northwest, and upgradient of the campus. Because the aquifer is upgradient and is located a considerable distance from the campus, it is unlikely that a release at the site could impact drinking water quality. There are no drinking water aquifers downgradient of the campus that are within a close enough proximity to be impacted by a potential release from the facility.

4.1.2 Known and Potential Releases to Groundwater

There have been three releases of petroleum on the subject property. All releases were related to leaking USTs. Impacted soil has been remediated, and groundwater monitoring is ongoing.

Between 2005 and 2009, three releases of petroleum products associated with USTs located in the northwest portion of the facility behind Buildings 19 and 22 were reported to the CTDEEP. A summary of these releases is provided below.

- November 2005 (CTDEEP Spill #778261): An overflow spill of approximately 1,700 gallons of No. 2 fuel oil was released to the ground from two 20,000-gallon UST located in back of Building 22. Emergency response actions were conducted, the USTs were emptied and removed, and all impacted soil and gravel was removed and disposed off-site. A subsurface investigation confirmed that soil impacts were remediated; however, a limited groundwater sampling program indicated that groundwater in the area was impacted with petroleum related compounds including extractable total petroleum hydrocarbons (ETPH), aromatic volatile organic compounds (aVOCs), and polyaromatic hydrocarbons (PAHs).
- November 2008 (CTDEEP Spill #2008-07338): ETPH and PAHs were detected in one or more confirmatory soil and excavation groundwater samples collected during the removal and closure of two 20,000-gallon No. 2 fuel oil USTs located behind Building 19, prompting the reporting of a spill to the CTDEEP. Although PAHs were elevated in one soil sample above applicable CTDEEP Remediation Standard Regulation (RSR) criteria, concentrations of ETPH were low and no other evidence of a potential release was noted. It was suspected that these detections may have been associated with fill material around the USTs and not a release from the USTs themselves.
- June 2009 (CTDEEP Spill ##2009-02894): Soils visibly impacted by petroleum were encountered during the removal of a pump island associated with a 1,500-gallon gasoline UST

and a 500-gallon diesel UST located behind Building 22. Visibly impacted soils around the pump island were removed and subsequent confirmatory samples were below applicable RSR criteria. Soil excavation was also conducted during closure of the diesel UST to remove confirmatory soil sample material containing elevated PAHs, although it was suspected that these detections may have been associated with fill material around the UST and not a release from the UST itself since ETPH concentrations were low and no other release indicators were noted.

A series of monitoring wells were installed in the area, and four consecutive quarters of groundwater level gauging and sampling were conducted in September 2011, December 2011, March 2012, and June 2012 at each of the eight bedrock monitoring wells (BRW-1 to BRW-8) present at the Site. Groundwater sampling was performed using low-flow groundwater sampling techniques in general accordance with United States Environmental Protection Agency (USEPA) Region I low stress (low flow) purging and sampling guidance. Groundwater samples collected between September 2011 and June 2012 were analyzed for the following compounds:

- Aromatic Volatile Organic Compounds (aVOCs) by USEPA SW-846 Method 8260B;
- Poly-aromatic Hydrocarbons (PAHs) by USEPA SW-846 Method 8270C; and
- Extractable total petroleum hydrocarbons (ETPH) by the CTETPH Method.

In general, aVOCs and ETPH in groundwater from site monitoring wells have decreased or remained stable since well installation and initiation of monitoring activities at each monitoring well. Concentrations of PAHs in groundwater from all wells have generally remained stable or show no apparent trend. These data suggest that contaminated groundwater in this area may be naturally attenuating and limiting the downgradient migration of the plume. Concentrations of aVOCs, PAHs, and ETPH in groundwater from most wells are below applicable 1996 RSR and/or alternative criteria published by the CTDEEP. However, concentrations of several constituents in groundwater still exceed applicable criteria at current compliance point monitoring well locations for the R- and for the SWPC.

In addition, two new wells were installed in March 2013. Two rounds of quarterly groundwater sampling were conducted in March and June, 2013. The analytical results also show decreasing contaminant levels.

Other than the three leaking USTs previously discussed, there have been no known releases of other hazardous substances to groundwater at the subject property.

4.1.3 Groundwater Migration Pathway Targets

The population of West Haven and all surrounding towns and cities rely on municipal drinking water supplies provided by Regional Water Authority (RWA). The RWA draws water from a number of aquifers and reservoirs in a 400-square mile area. The City of West Haven Department of Health does not maintain an active database of homes which rely on private water wells, but staff is unaware of any wells in the area, and municipal water supply is available to all residences in the city. The closest aquifer protection area is approximately 8.3 miles to the northwest in the towns of Derby and Shelton. Figure 4-3 illustrates the absence of groundwater protection areas.

4.1.4 Groundwater Migration Pathway Conclusions

A release of a hazardous substance from the subject property to groundwater is not suspected due to the hazardous waste storage methods employed, the depth to water, and a lack of a documented release history during the record review. Since no residences are known to rely on private wells within the area, there are no known primary targets for this pathway.

4.2 SURFACE WATER MIGRATION PATHWAY

4.2.1 Hydrologic Setting

The West Haven campus discharges stormwater from portions of the site to the City of West Haven municipal separate storm sewer system (MS4), and from other portions of the site directly to an unnamed intermittent creek that is a tributary to the West River. One small culvert in the northwest corner of the site likely drains to an unnamed tributary of the Cove River. Both the Cove River and the West River discharge into New Haven Harbor and Long Island Sound; the Cove River discharge is approximately two miles from the center of campus, while the West River discharge is approximately one mile from the center of campus.

The Cove River is classified as a Class A waterbody, with the following designated uses: potential drinking water supply; fish and wildlife habitat; recreational use; agricultural and industrial supply and other legitimate uses including navigation.

The West River is classified as a Class C waterbody, indicating that the water quality is impaired. It has a Class B water quality goal, which would allow the following designated uses: recreational use; fish and wildlife habitat; agricultural and industrial supply and other legitimate uses including navigation.

New Haven Harbor is classified as a Class SD/SB waterbody, indicating that the water quality is impaired. It has a Class SB water quality goal, which would allow the following designated uses: fishing, swimming & recreation, healthy marine habitat, commercial shellfish harvesting (requires purification), industrial supply.

Overland drainage from the site primarily flows northeast towards Campbell Avenue, and is collected by stormwater catch basins located on and around the campus. The West Haven VA's primary activity/SIC Code is not regulated as an industrial activity and the facility does not currently have any construction activities that disturb one or more acres of land. However, because West Haven is a federally-owned and operated facility that discharges directly to surface waters of the State, it is potentially regulated under the CTDEEP stormwater discharge program for small MS4s. CTDEEP is in the process of developing a General Permit for federally-owned facilities; however, this General Permit is not yet in place. Therefore, West Haven is not currently subject to any permitting requirements for this activity.

4.2.2 Known and Potential Releases to Surface Water

There have been no known hazardous substances releases to surface water from the campus. A potential release from the campus is unlikely to adversely impact surface waters because all hazardous wastes and hazardous substances are accumulated and/or stored indoors, wastes are provided with secondary containment, and the facility is located outside of the FEMA 100-year flood plain.

4.2.3 Surface Water Migration Pathway Targets

There are no drinking water intakes located within the area downgradient of the campus. All surface water runs into New Haven Harbor within two miles of campus. All residents of West Haven and all surrounding towns are provided potable water by the RWA.

There are no Natural Diversity Database areas within the subregional watersheds within which the property lies.

4.2.4 Surface Water Migration Pathway Conclusions

In the event of a release to surface water, there is a minimal potential for hazardous materials to contaminate downgradient water bodies due to the distance and intermittent nature of the nearby features. Due to the management of the hazardous substances and hazardous wastes, and the relatively small volume of hazardous substances present at the campus, it is unlikely that a release at or from the facility could pose a threat to the environmental integrity of the downgradient surface waters and wetland areas.

There are no indications of a release of hazardous material to surface water from the campus. Site reconnaissance of the subject and adjacent properties did not show any signs of stressed vegetation or pavement staining in hazardous material storage areas, and all hazardous materials are stored in enclosed areas that have been provided with secondary containment. A records review of the site did not reveal any historic releases.

4.3 SOIL EXPOSURE AND AIR PATHWAYS

4.3.1 Physical Source Access Conditions

The campus is an active medical center with an approximate maximum population on site at any time of 3250, including patients, visitors, contractors, and employees. The facility maintains Police/Security Officers that provide 24-hour patrols of the facility and there is fencing along the perimeter to limit access points. While access to the campus is open to patients, the hazardous waste accumulation and storage areas are located indoors, secured, and equipped with secondary containment.

4.3.2 Known and Potential Contamination Areas

There are no known contaminated areas on campus; previously contaminated areas related to the leaking USTs have been remediated, and post-remediation groundwater monitoring is underway. Potential contamination is unlikely in this pathway due to the indoor storage of wastes.

4.3.3 Soil and Air Exposure Pathway Targets

The total population within four miles of subject property was determined using Landview version 6 software, published by the US Census Bureau. The population is based off of block counts in the 2000 US Census and is summarized below in Table 4-1.

Table 4-1: Population Breakdown

Distance Category	Residences	Population	Data Source
0 to .25 miles	868	2125	LandView 6
.25 to .5 miles	1862	5414	LandView 6
.5 to 1 Mile	4551	10163	LandView 6
1 to 2 Miles	18197	43210	LandView 6
2 to 3 Miles	19300	46955	LandView 6
3 to 4 miles	27522	63693	LandView 6
Total 4 Miles Population	72300	171560	LandView 6

4.3.4 Soil and Air Exposure Pathway Conclusions

A release to the soil exposure pathway is not expected from the subject property because all hazardous substances on site are stored in sealed containers and located in secure indoor areas. The security measures discussed in Sections 3.2.1 and 3.2.3 allow only trained, authorized personnel to access and handle these materials which minimizes the risk of a release to the environment. In addition to the security measures, the facility's MAA and the 73 SAAs are equipped with secondary containment measures sufficient to contain a release. These areas are inspected on a weekly basis to identify releases and minimize the amount of waste on site at any time. Based on records review and site reconnaissance, a release to the soil with the potential to significantly impact the soil exposure pathway is not expected from the campus. Moreover, any release that may occur is likely to be discovered quickly and contained within a building or structure.

A release to the air pathway is not expected because the facility does not treat, burn, or use any hazardous materials in a way that would cause them to become airborne. West Haven operates its air emissions sources under CTDEEP's General Permit to Limit Potential to Emit from Major Stationary Sources of Air Pollution (GPLPE). Monthly and rolling 12-month emissions are tracked by West Haven to demonstrate compliance with the applicable GPLPE limits. West Haven is also subject to several of CTDEEP's Air Pollution Control Regulations as well as EPA's NSPS, NESHAP and Protection of Stratospheric Ozone programs. In general the air program at West Haven is well run and very organized.

Figure 4-1: Bedrock Geology Map

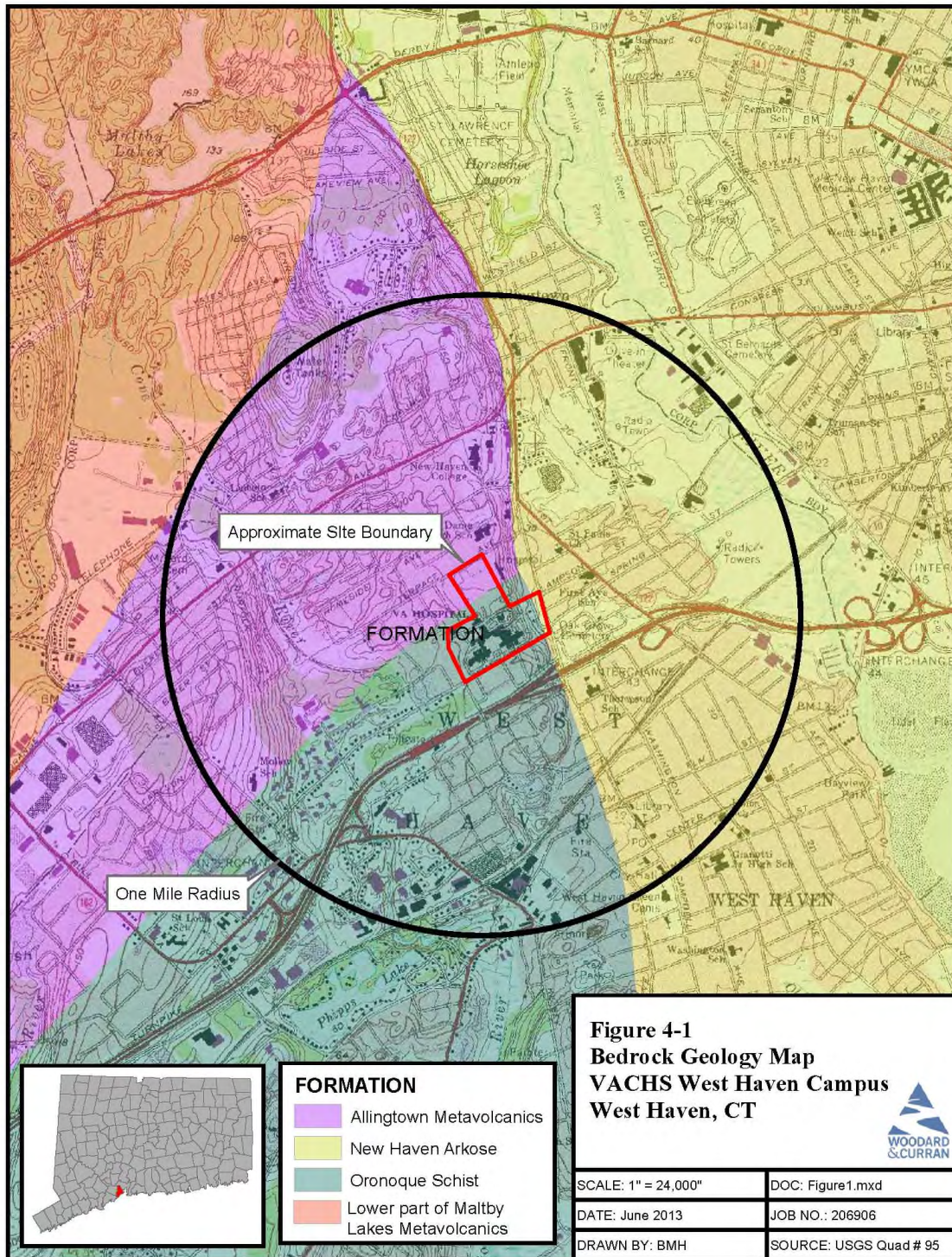
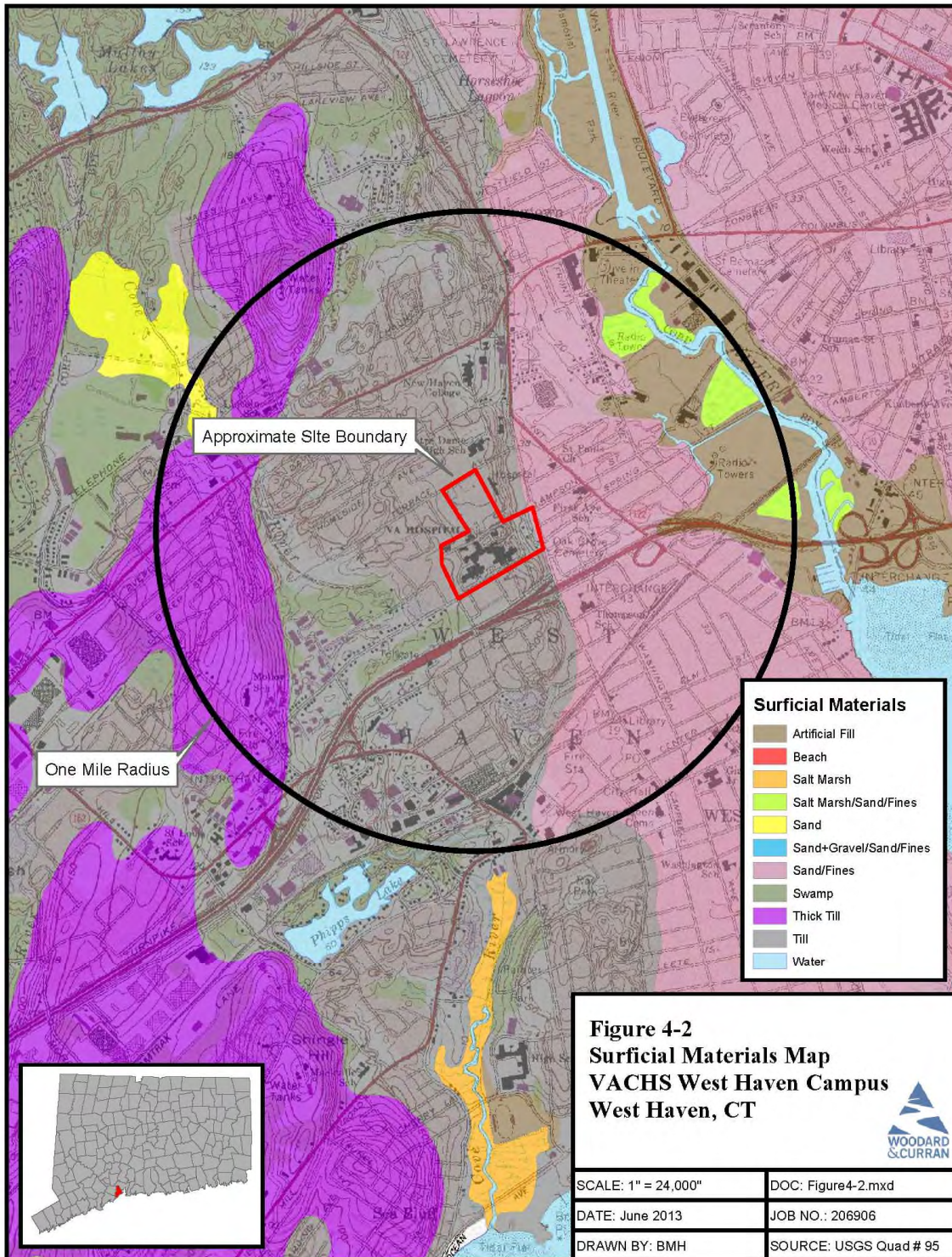


Figure 4-2: Surficial Geology Map



5. SUMMARY AND CONCLUSION

The campus has operated at the present location since approximately 1920, and recently became classified as a LQG of hazardous waste due to an increase in the quantities of acutely hazardous pharmaceutical wastes shipped off site for treatment and disposal, such as osmium tetroxide, epinephrine, and nitroglycerine. As a result of the facility's change in hazardous waste generator status, the VACHS has prepared and implemented an Integrated Contingency Plan and employee training program. Both of these steps decrease the likelihood of a hazardous waste release from occurring and increase the likelihood that any hazardous waste release would be addressed appropriately. Moreover, all hazardous waste and hazardous substance storage accumulation areas on campus are located indoors and have been provided with a means of secondary containment. Access to the hazardous waste storage areas is restricted to authorized individuals to prevent tampering and vandalism.

The facility's current waste management practices minimize the amount of hazardous waste present at any given time and prevent accidental releases via the assessed exposure pathways. Security procedures are sufficient to limit exposure to human targets on the premises by preventing unauthorized access to storage areas.

This assessment has revealed no evidence of hazardous waste releases in connection with the current or historic operations at the campus, other than three leaking underground storage tanks which have been investigated, remediated, and is currently undergoing groundwater monitoring. During the site reconnaissance, no odors or stressed vegetation were noted. The historic CTDEEP-reportable releases are unlikely to pose a threat to the environmental integrity of the surrounding area because of the nature and quantity of the releases and the appropriate clean-up measures employed. Additionally, these were generally petroleum releases that are not regulated under CERCLA and cannot influence the site's CERCLIS eligibility decision.

Available documentation does not identify any significant past hazardous substances releases and based on the current volume of hazardous substances on site and the means by which these substances are managed, there is very little threat that an on-site release would pose a threat to human health or the environment. Accordingly, the site should be removed from the CERCLIS list and be assigned a NFRAP designation.

APPENDIX A: PHOTO LOG

Photo 1: Main Accumulation Area Exterior



Photo 2: Main Accumulation Area Shelves



Photo 3: Example Satellite Accumulation Area - Laboratory



Photo 4: Example Satellite Accumulation Area – Medication Room



Photo 5: 55-gallon Waste Oil Drum on Secondary Containment



Photo 6: Double-walled Aboveground Storage Tank – Diesel



Photo 7: Emergency Backup Generator



Photo 8: #2 Heating Oil Aboveground Storage Tank – 120,000-gallons



APPENDIX B: ABBREVIATED PRELIMINARY ASSESMENT CHECKLIST

APPENDIX C: HAZARDOUS WASTE STORAGE LOCATIONS

Building Number	Floor Number	Room Number:	Waste Site Type	Waste Pickup Frequency	Department:
1	1	1-175	SAA	Weekly	Laboratory
1	1	1-180	SAA	Weekly	Laboratory
1	1	1-229 (Hemo/Chemistry)	SAA	Weekly	Laboratory
1	1	1-208 (Micro Biology)	SAA	Weekly	Laboratory
1	3	OR	SAA	Weekly	Medical Service
1	3	Med Rm 3-251B (PACU)	SAA	Weekly	Medical Service
1	3	Soiled Utility Rm by Med Rm (PACU)	SAA	Weekly	Medical Service
1	3	Endo Med Room 3-183	SAA	Monthly	Medical Service
1	4	4 East - Medical Surgical Medication Room 4-132	SAA	Monthly	Medical Service
1	4	4 West Medication Room 4-164	SAA	Monthly	Medical Service
1	5	5 South Flex Med Rm 5-159	SAA	Monthly	Medical Service
1	5	5 Step Down Med Rm 5-175	SAA	Monthly	Medical Service
1	5	MICU Med Rm 5-125	SAA	Monthly	Medical Service
1	7	7 East Medication Room 7-141	SAA	Monthly	Medical Service
1	8	W8-199 (Med Room)	SAA	Weekly	Medical Service
1	9	BioStudies Room 9-136	SAA	Weekly	Research
1	G	G-220 (In Patient Pharmacy)	SAA	Weekly	Pharmacy
1	G	Women's Health Center G225	SAA	Monthly	Women's Health Center
1	G	Room G265 (Radiation Material Storage Room)	MAA	90 Days	Radiation Safety
1	SG	Morgue (Formalin)	SAA	Monthly	Laboratory
2	G	Dialysis Med. Room G123B	SAA	Monthly	Dialysis
2	1	MER Medication Rm 1-149	SAA	Monthly	Medical Service
2	1	1-340 (Psych ER Med Room)	SAA	Weekly	Medical Service
2	1	Firm A Med Room 1211A	SAA	Weekly	Firm A

Building Number	Floor Number	Room Number:	Waste Site Type	Waste Pickup Frequency	Department:
2	1	Specialty Med Room 1241A	SAA	Weekly	Specialty Clinic
2	2	Room 2-104 (Out-Patient Pharmacy)	SAA	Weekly	Pharmacy
2	2	2-218 (TB Lab)	SAA	Weekly	Laboratory
2	2	2-220 (TB Lab)	SAA	Weekly	Laboratory
2	2	2-224 (TB Lab)	SAA	Weekly	Laboratory
2	2	2-219 (TB Lab)	SAA	Weekly	Laboratory
2	2	2-117A (Dental)	SAA	Weekly	Dental Clinic
2	2	Firm B Med Room 2145A	SAA	Monthly	Primary Care Firm B
2	2	Specialty Med Room 2185A	SAA	Monthly	Specialty Clinic
2	3	3-221 (T3W Med Room)	SAA	Weekly	Medical Service
2	4	Urology Nurse Station 4-103	SAA	Monthly	Urology
2	4	Room 4-192	SAA	Monthly	Eye Clinic
2	5	5-226	SAA	Weekly	Research
2	5	Room 5-202 Pharmacy	SAA	Monthly	Cancer Center
2	5	Room 5-216 Vital Signs	SAA	Monthly	Specialty Clinic
2	6	Blind Rehab. Med Room 6205	SAA	Monthly	Blind Rehab
2	7	7-107	SAA	Weekly	Research
2	7	7-157	SAA	Weekly	Research
2	7	7-192	SAA	Weekly	Research
2	7	7-227	SAA	Weekly	Research
2	8	8-123	SAA	Monthly	Research
2	8	8-135	SAA	Weekly	Research
2	8	8-145	SAA	Weekly	Research
3	1	E102/E105	SAA	Monthly	Research
3	2	E203	SAA	Monthly	Research
4	2	D-210	SAA	Monthly	Research
4	2	D-205	SAA	Weekly	Research
4	2	D-209	SAA	Monthly	Research
4	2	D-204	SAA	Monthly	Research
4	2	D-211	SAA	Monthly	Research
4	2	D-228	SAA	Weekly	Research

Building Number	Floor Number	Room Number:	Waste Site Type	Waste Pickup Frequency	Department:
4	2	D-214	SAA	Weekly	Research
4	2	D-218	SAA	Weekly	Research
5	1	C129	SAA	Monthly	Research
5	2	C265/268	SAA	Monthly	Virology Laboratory
5	2	C204	SAA	Monthly	Virology Laboratory
5	2	C215	SAA	Monthly	Research
5	2	C237	SAA	Monthly	Research
5	2	C272	SAA	Monthly	Research
5	2	C232	SAA	Monthly	Research
22	1	Paint Shop	SAA	Weekly	Facilities
27	1	163	SAA	Weekly	Research
34	1	104	SAA	Weekly	Research
34	1	107	SAA	Weekly	Research
34	1	113	SAA	Weekly	Research
34	1	123	SAA	Monthly	Research
34	1	125	SAA	Weekly	Research
34	1	127	SAA	Weekly	Research
34	1	154	SAA	Weekly	Research
16	1	Chiller Plant	Used Oil	Monthly	Facilities
50	1	Hazardous Waste Shed MAA	MAA	Weekly	Safety

Satellite Accumulation Area Collection Requirements
HAZARDOUS WASTE THAT MUST BE PLACED IN BLACK CONTAINER

COMMON P-LISTED WASTE, Empty Containers, Expired Products, Residuals			
Arsenic Trioxide	P012, D004	Phentermine HCl	P046
Epinephrine Injection	P042	Physostigmine (all forms)	P204
(including combination products)		Physostigmine Salicylate	P188
Nicotine Patches and Gum	P075	Warfarin (Coumadin) NA Tablets	P001
Nicotine Polacrilex Lozenges	P075	(Concentration > 0.3%)	
Nitroglycerin (all forms)	P081	(If Concentration < 0.3% it is U248 waste)	
COMMON D- and U-LISTED WASTE, Expired Products or >3% by Weight of Total Capacity of Immediate Container			
Acetic Acid	D002	Fluorescein Sodium&Strip (w/thimerisol)	D009
Alcohol Dehydrate USP Inj.	D001	Fluorometholone 0.1% OPH Oint	D009
Alcohol & Prep Pads	D001	Flurbiprofen (w/thimerisol)	D009
Amyl Nitrite	D001	Formaldehyde 37% Sol	U122, D001, D002
Antihemophilic Factor (w/thimerisol)	D009	Formic Acid 88% Tech Liquid	U123, D002
Argatroban Vial	D001	Hepatitis B Vaccine (w/thimerisol)	D009
Barium Sulfate Powder	D005	Hexachlorophene	U132
BCG (Theracys)81MG/Vial (w/thimerisol)	D009	H1N1 Vaccine (w/thimerisol)	D009
Benzoin Compound	D001	Hydrogen Peroxide	D001
Benzoyl Peroxide Lotion & Wash	D001	Isosorbide Dinitrate	D001
Carbamide Peroxide	D001, D002	Lindane Lotion & Shampoo	U129, D013
Charcoal, Activated	D001, D003	Lidocaine HCL	D002
Chloral Hydrate	U034	M-cresol	D024
Chlorambucil	U035	Melphalan Injection & Tab	U150
Chloramphenicol (w/mercury presv.)	D009	Mercaptopurine Tab (w/thimerisol)	D009
Chlorothiazide (w/mercury presv.)	D009	Mitomycin C Injection	U010
Chloroform	D022	Paraldehyde	U182
Chromagen Capsules	D007	Phenacetin	U187
Chromium Chloride	D002, D007	Phenol	U188
Collodion Flexible Solution	D002, D007	Reserpine Tablets	U200
Cyclophosphamide Inj & Tab	U058	Resorcinol	U201
Cycloserine Cap	D001, D003	Selenium Sulfide Lotion & Shampoo	U205
Dakins Solution	D002	Silver Nitrate	D001, D011
Daunorubicin (Daunomycin)	U059	Silver Sulfadiazine Cream	D011
Dichlorofluoromethane	U075	Streptozocin Injection	U206
Diethylstilbestrol Inj & Tab	U089	Trichloroacetic Acid	D002
Dimercaprol	D011	Trichlorofluoromethane	U121
Ethyl Alcohol	D001	Uracil Mustard	U237
Factor 9 Complex Units (w/thimerisol)	D009	Witch Hazel Solution & Pad	D001

When BLACK Collection Container is $\frac{3}{4}$ full, call x4197 (Ling Xu) or x7389 (Safety Hotline).

APPENDIX D: ENVIROFACTS REPORTS

APPENDIX E: EDR REPORT

APPENDIX F: UST LOCATIONS AND SIGNIFICANT FEATURES

APPENDIX G: REFERENCES

REFERENCES

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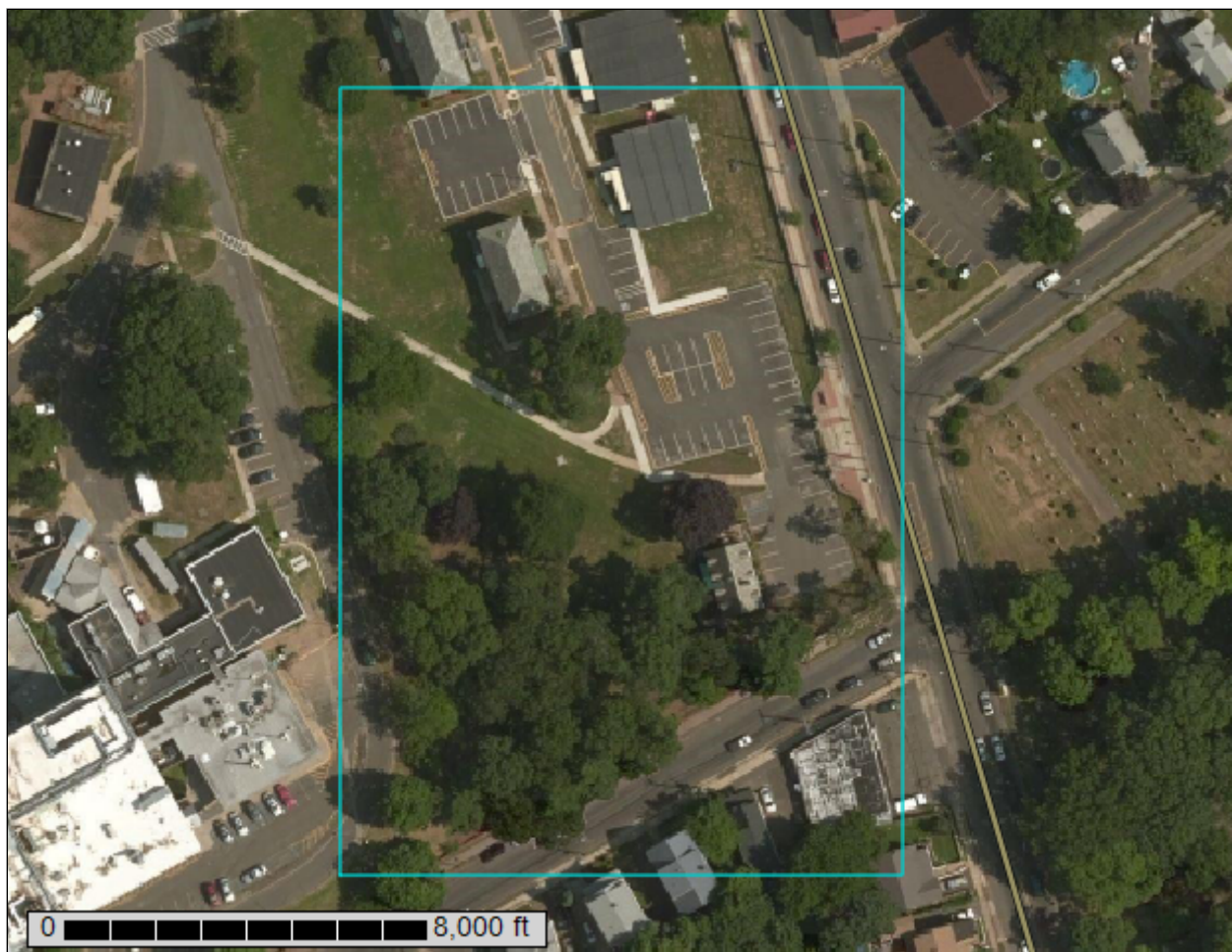
United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for State of Connecticut



August 7, 2015

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<http://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

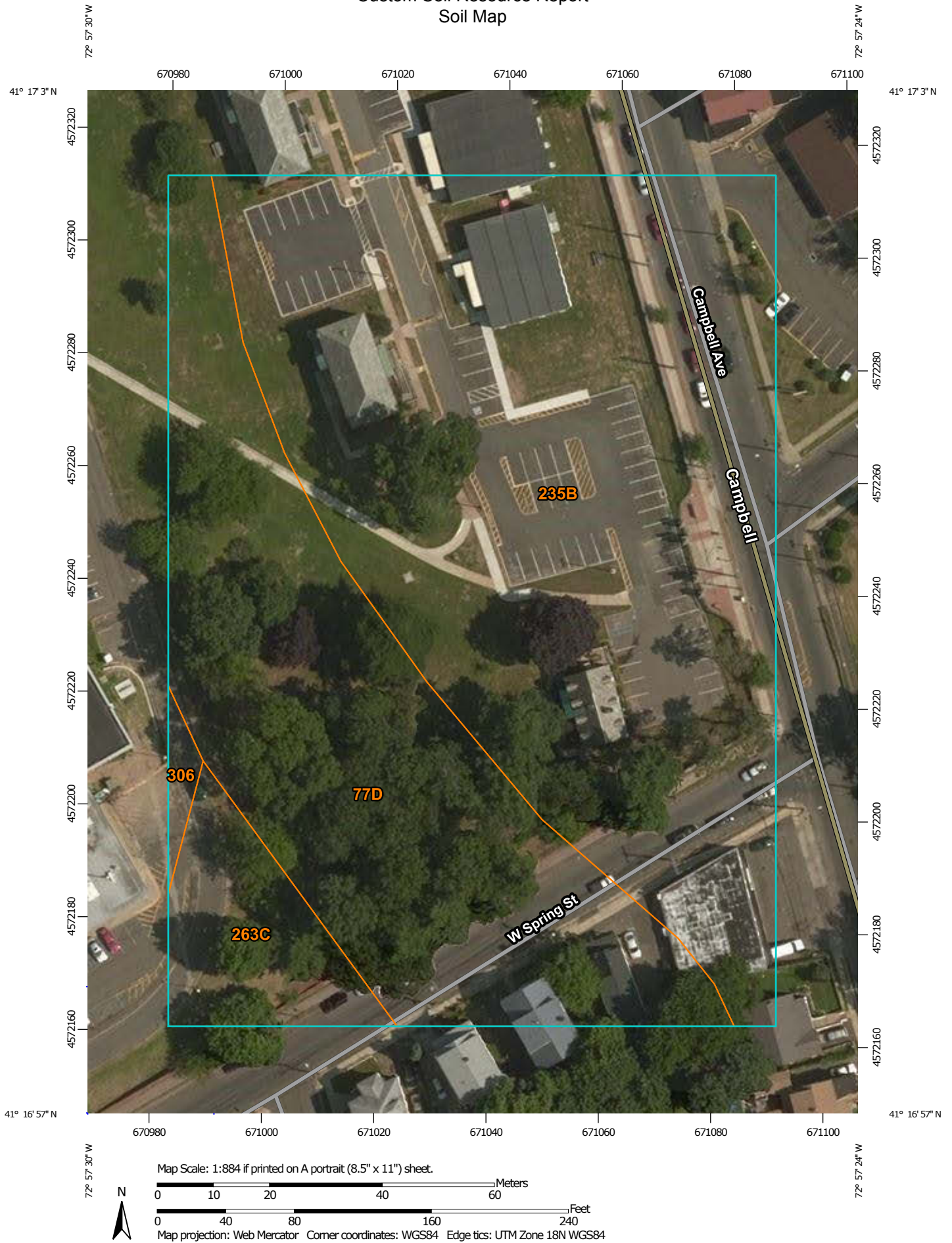
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.


Custom Soil Resource Report Soil Map



Custom Soil Resource Report


MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)


Soils


 Soil Map Unit Polygons


 Soil Map Unit Lines


 Soil Map Unit Points

Special Point Features

 Blowout


 Borrow Pit


 Clay Spot


 Closed Depression

 Gravel Pit

 Gravelly Spot


 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry


 Miscellaneous Water


 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot


 Sinkhole


 Slide or Slip

 Sodic Spot


 Spoil Area

 Stony Spot


 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals


Transportation

 Rails


 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: State of Connecticut
Survey Area Data: Version 13, Oct 28, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 27, 2014—Jul 22, 2014

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

State of Connecticut (CT600)			
Map Unit Symbol			
77D	Cheshire-Holyoke complex, 15 to 35 percent slopes, very rocky	1.3	32.8%
235B	Penwood-Urban land complex, 0 to 8 percent slopes	2.4	60.2%
263C	Cheshire-Urban land complex, 8 to 15 percent slopes	0.3	6.3%
306	Udorthents-Urban land complex	0.0	0.7%
Totals for Area of Interest		4.1	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic

classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

State of Connecticut

77D—Cheshire-Holyoke complex, 15 to 35 percent slopes, very rocky

Map Unit Setting

National map unit symbol: 9lqt
Elevation: 0 to 1,200 feet
Mean annual precipitation: 40 to 56 inches
Mean annual air temperature: 45 to 55 degrees F
Frost-free period: 140 to 185 days
Farmland classification: Not prime farmland

Map Unit Composition

Cheshire and similar soils: 45 percent
Holyoke and similar soils: 35 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cheshire

Setting

Landform: Hills, till plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Coarse-loamy melt-out till derived from basalt and/or sandstone and shale

Typical profile

Ap - 0 to 8 inches: fine sandy loam
Bw1 - 8 to 16 inches: fine sandy loam
Bw2 - 16 to 26 inches: fine sandy loam
C - 26 to 65 inches: gravelly sandy loam

Properties and qualities

Slope: 15 to 35 percent
Percent of area covered with surface fragments: 1.6 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B

Description of Holyoke

Setting

Landform: Hills, ridges
Down-slope shape: Convex

Custom Soil Resource Report

Across-slope shape: Convex

Parent material: Loamy eolian deposits over melt-out till derived from basalt and/or sandstone and shale

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material

A - 1 to 3 inches: silt loam

Bw1 - 3 to 8 inches: silt loam

Bw2 - 8 to 18 inches: gravelly silt loam

2R - 18 to 80 inches: unweathered bedrock

Properties and qualities

Slope: 15 to 35 percent

Percent of area covered with surface fragments: 1.6 percent

Depth to restrictive feature: 10 to 20 inches to lithic bedrock

Natural drainage class: Well drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Low to high (0.01 to 1.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: Very low (about 2.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: D

Minor Components

Yalesville

Percent of map unit: 10 percent

Landform: Hills, ridges

Down-slope shape: Convex

Across-slope shape: Linear

Rock outcrop

Percent of map unit: 6 percent

Watchaug

Percent of map unit: 1 percent

Landform: Hills, till plains

Down-slope shape: Linear

Across-slope shape: Concave

Wilbraham

Percent of map unit: 1 percent

Landform: Depressions, drainageways

Down-slope shape: Concave

Across-slope shape: Concave

Wethersfield

Percent of map unit: 1 percent

Landform: Drumlins, hills

Down-slope shape: Linear

Across-slope shape: Convex

Menlo

Percent of map unit: 1 percent
Landform: Depressions, drainageways
Down-slope shape: Concave
Across-slope shape: Concave

235B—Penwood-Urban land complex, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9lkn
Elevation: 0 to 1,200 feet
Mean annual precipitation: 43 to 56 inches
Mean annual air temperature: 45 to 55 degrees F
Frost-free period: 140 to 185 days
Farmland classification: Not prime farmland

Map Unit Composition

Penwood and similar soils: 40 percent
Urban land: 35 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Penwood

Setting

Landform: Outwash plains, terraces
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Sandy glaciofluvial deposits derived from sandstone and shale

Typical profile

Ap - 0 to 8 inches: loamy sand
Bw1 - 8 to 18 inches: loamy sand
Bw2 - 18 to 30 inches: sand
C - 30 to 60 inches: sand

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 99.62 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2s

Hydrologic Soil Group: A

Description of Urban Land

Typical profile

H - 0 to 6 inches: material

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8

Hydrologic Soil Group: D

Minor Components

Manchester

Percent of map unit: 5 percent

Landform: Eskers, kames, outwash plains, terraces

Down-slope shape: Convex

Across-slope shape: Convex

Ellington

Percent of map unit: 5 percent

Landform: Outwash plains, terraces

Down-slope shape: Linear

Across-slope shape: Linear

Hartford

Percent of map unit: 5 percent

Landform: Outwash plains, terraces

Down-slope shape: Linear

Across-slope shape: Linear

Udorthents

Percent of map unit: 5 percent

Down-slope shape: Convex

Across-slope shape: Linear

Branford

Percent of map unit: 5 percent

Landform: Outwash plains, terraces

Down-slope shape: Linear

Across-slope shape: Linear

263C—Cheshire-Urban land complex, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 91lf

Elevation: 0 to 1,200 feet

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Mean annual precipitation: 43 to 56 inches
Mean annual air temperature: 45 to 55 degrees F
Frost-free period: 140 to 185 days
Farmland classification: Not prime farmland

Map Unit Composition

Cheshire and similar soils: 40 percent
Urban land: 35 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cheshire

Setting

Landform: Hills, till plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Coarse-loamy melt-out till derived from basalt and/or sandstone and shale

Typical profile

Ap - 0 to 8 inches: fine sandy loam
Bw1 - 8 to 16 inches: fine sandy loam
Bw2 - 16 to 26 inches: fine sandy loam
C - 26 to 65 inches: gravelly sandy loam

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B

Description of Urban Land

Typical profile

H - 0 to 6 inches: material

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D

Minor Components

Udorthents

Percent of map unit: 5 percent
Down-slope shape: Convex

Across-slope shape: Linear

Wethersfield

Percent of map unit: 5 percent

Landform: Drumlins, hills

Down-slope shape: Linear

Across-slope shape: Convex

Watchaug

Percent of map unit: 5 percent

Landform: Hills, till plains

Down-slope shape: Linear

Across-slope shape: Concave

Wilbraham

Percent of map unit: 5 percent

Landform: Depressions, drainageways

Down-slope shape: Concave

Across-slope shape: Concave

Yalesville

Percent of map unit: 3 percent

Landform: Hills, ridges

Down-slope shape: Convex

Across-slope shape: Linear

Menlo

Percent of map unit: 2 percent

Landform: Depressions, drainageways

Down-slope shape: Concave

Across-slope shape: Concave

306—Udorthents-Urban land complex

Map Unit Setting

National map unit symbol: 9lmg

Elevation: 0 to 2,000 feet

Mean annual precipitation: 43 to 56 inches

Mean annual air temperature: 45 to 55 degrees F

Frost-free period: 120 to 185 days

Farmland classification: Not prime farmland

Map Unit Composition

Udorthents and similar soils: 50 percent

Urban land: 35 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents

Setting

Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Drift

Typical profile

A - 0 to 5 inches: loam
C1 - 5 to 21 inches: gravelly loam
C2 - 21 to 80 inches: very gravelly sandy loam

Properties and qualities

Slope: 0 to 25 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to high (0.00 to 1.98 in/hr)
Depth to water table: About 54 to 72 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 6.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B

Description of Urban Land

Typical profile

H - 0 to 6 inches: material

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D

Minor Components

Unnamed, undisturbed soils

Percent of map unit: 8 percent

Udorthents, wet substratum

Percent of map unit: 5 percent
Down-slope shape: Convex
Across-slope shape: Linear

Rock outcrop

Percent of map unit: 2 percent

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West Haven VAMC - Fisher House NEPA

IPaC Trust Resources Report

Generated May 16, 2016 11:03 AM MDT, IPaC v3.0.7

This report is for informational purposes only and should not be used for planning or analyzing project level impacts. For project reviews that require U.S. Fish & Wildlife Service review or concurrence, please return to the IPaC website and request an official species list from the Regulatory Documents page.

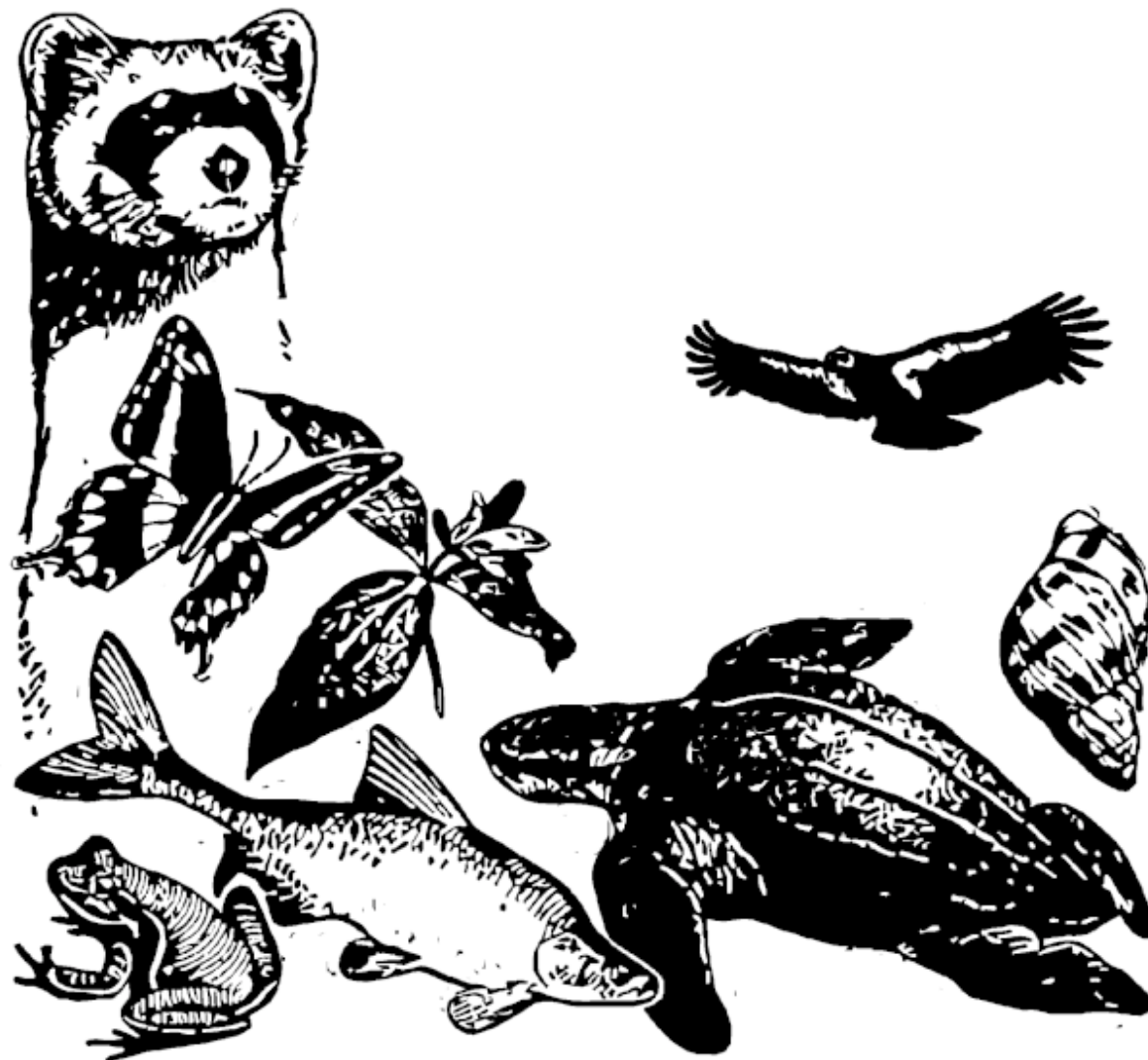


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U.S. Fish & Wildlife Service

IPaC Trust Resources Report



NAME

West Haven VAMC - Fisher House
NEPA

LOCATION

New Haven County, Connecticut

DESCRIPTION

West Haven VAMC - Fisher House
Proposed Construction and Operation.
Project activities will be limited to the
southeastern corner of the site.
Building 14 will be demolished, and the
Fisher House will be constructed on
the same footprint.



IPAC LINK

[https://ecos.fws.gov/ipac/project/
ILHKN-F537J-C6XJN-6XWAH-IDXMZQ](https://ecos.fws.gov/ipac/project/ILHKN-F537J-C6XJN-6XWAH-IDXMZQ)

U.S. Fish & Wildlife Service Contact Information

Trust resources in this location are managed by:

New England Ecological Services Field Office

70 Commercial Street, Suite 300

Concord, NH 03301-5094

(603) 223-2541

Endangered Species

Proposed, candidate, threatened, and endangered species are managed by the [Endangered Species Program](#) of the U.S. Fish & Wildlife Service.

This USFWS trust resource report is for informational purposes only and should not be used for planning or analyzing project level impacts.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list from the Regulatory Documents section.

[Section 7](#) of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency.

A letter from the local office and a species list which fulfills this requirement can only be obtained by requesting an official species list either from the Regulatory Documents section in IPaC or from the local field office directly.

The list of species below are those that may occur or could potentially be affected by activities in this location:

Birds

Red Knot *Calidris canutus rufa*

Threatened

CRITICAL HABITAT

No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0DM

Critical Habitats

There are no critical habitats in this location

Migratory Birds

Birds are protected by the [Migratory Bird Treaty Act](#) and the [Bald and Golden Eagle Protection Act](#).

Any activity that results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish & Wildlife Service.^[1] There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures.

1. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

Additional information can be found using the following links:

- Birds of Conservation Concern
<http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Conservation measures for birds
<http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Year-round bird occurrence data
<http://www.birdscanada.org/birdmon/default/datasummaries.jsp>

The following species of migratory birds could potentially be affected by activities in this location:

American Oystercatcher *Haematopus palliatus*

Year-round

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0G8

Bird of conservation concern

American Bittern *Botaurus lentiginosus*

Season: Breeding

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0F3

Bird of conservation concern

Bald Eagle *Haliaeetus leucocephalus*

Year-round

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B008

Bird of conservation concern

Black Skimmer *Rynchops niger*

Season: Breeding

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0EO

Bird of conservation concern

Black-billed Cuckoo <i>Coccyzus erythrophthalmus</i> Season: Breeding http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HI	Bird of conservation concern
Blue-winged Warbler <i>Vermivora pinus</i> Season: Breeding	Bird of conservation concern
Canada Warbler <i>Wilsonia canadensis</i> Season: Breeding	Bird of conservation concern
Fox Sparrow <i>Passerella iliaca</i> Season: Wintering	Bird of conservation concern
Hudsonian Godwit <i>Limosa haemastica</i> Season: Migrating	Bird of conservation concern
Least Bittern <i>Ixobrychus exilis</i> Season: Breeding http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B092	
Peregrine Falcon <i>Falco peregrinus</i> Seasons: Breeding, Wintering http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0FU	Bird of conservation concern
Pied-billed Grebe <i>Podilymbus podiceps</i> Year-round	Bird of conservation concern
Prairie Warbler <i>Dendroica discolor</i> Season: Breeding	Bird of conservation concern
Purple Sandpiper <i>Calidris maritima</i> Season: Wintering	Bird of conservation concern
Rusty Blackbird <i>Euphagus carolinus</i> Season: Wintering	Bird of conservation concern
Saltmarsh Sparrow <i>Ammodramus caudacutus</i> Season: Breeding	Bird of conservation concern
Seaside Sparrow <i>Ammodramus maritimus</i> Year-round	Bird of conservation concern
Short-eared Owl <i>Asio flammeus</i> Season: Wintering http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HD	Bird of conservation concern
Snowy Egret <i>Egretta thula</i> Season: Breeding	Bird of conservation concern
Upland Sandpiper <i>Bartramia longicauda</i> Season: Breeding http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HC	Bird of conservation concern
Willow Flycatcher <i>Empidonax traillii</i> Season: Breeding http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0F6	Bird of conservation concern

Wood Thrush *Hylocichla mustelina*

Season: Breeding

Bird of conservation concern

Worm Eating Warbler *Helmitheros vermivorum*

Season: Breeding

Bird of conservation concern

Wildlife refuges and fish hatcheries

There are no refuges or fish hatcheries in this location

Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

DATA LIMITATIONS

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

DATA EXCLUSIONS

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

DATA PRECAUTIONS

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Wetland data is unavailable at this time.