WATERSHED INSPECTION GUIDELINES

Prepared by the
Source Water Protection Committee
of the Connecticut Section of the
American Water Works
Association
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Protecting drinking water supplies from contamination is an essential concern for all public drinking water suppliers in the state of Connecticut. Watershed inspections are a vital aspect of a comprehensive source water protection program, which should also include the review of proposed development projects, land use and zoning changes, monitoring of active construction sites and other sites with amplified potential for pollution, and collaborative efforts with municipal and state regulators to mitigate pollution sources that are discovered.

Section 19-13-B102(b) of the Regulations of Connecticut State Agencies (RCSA) requires water utilities to perform an annual sanitary survey of their watershed areas and to submit an annual sanitary survey report to the Connecticut Department of Public Health (DPH) (see Appendix A). Section 25-51 of the Connecticut General Statutes (CGS) authorizes water utility inspectors to enter and inspect premises located within public drinking water supply watershed areas (see Appendix B). For a summary of Connecticut statutes and regulations governing sanitary surveys, see Appendix C.

This document has been prepared to assist Connecticut's water utilities in developing a comprehensive watershed inspection program. These guidelines are not intended to serve as strict or definitive standards. Each water utility should develop a watershed inspection program that best suits the characteristics of its watershed areas.

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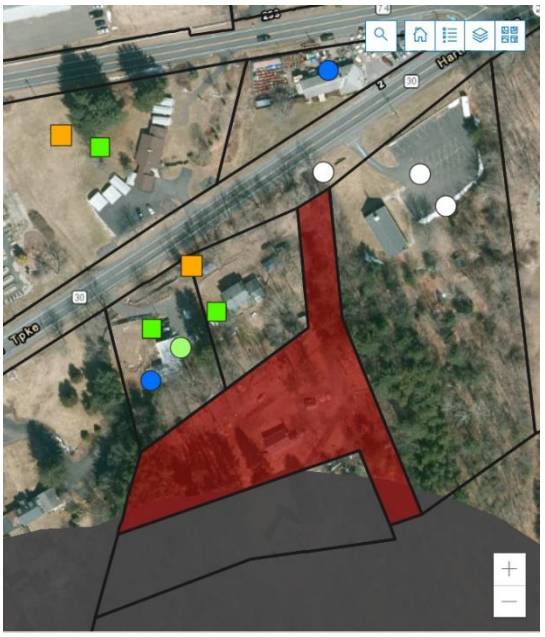
Maps and Record Keeping

The water utility should delineate the boundaries of its watershed areas on a watershed map. Geographic Information System (GIS) based watershed maps are available online at no charge from the Connecticut Department of Energy and Environmental Protection (DEEP) and the University of Connecticut's CT ECO Maps and Geospatial Data. Watershed maps are also available at DPH's Drinking Water Section Watershed GIS Map Viewer. It may be beneficial to prioritize inspection sites within a watershed based on characteristics such as proximity to the reservoir or well head, proximity to watercourses and drainage, type of land use, known historic or suspected issues and general topographic and soil conditions. Each site should have an individual written card, form, or computerized record with a sketch or map of the site showing the location of buildings and other structures, septic systems, fuel storage tanks, floor drains, nearby watercourses and drains, etc. Inspectors should assign an identification number or address to all inspection sites listed within the watershed and if feasible, the sites should be shown on the watershed map.

The following table recommends specific information that may be recorded and filed for each inspection site:

Field Name	Text Suggestions
Site ID#	Text
Inspector Name	Text
Inspector Assistant Name	Text
Inspection Date	Text
Watershed Name	Text
System/Public Water System (PWS)	Text
Town	Text
Property Address	Text
Property Owner Name	Text
Occupant Name (if different than Owner)	Text
Land Use	Residential/Commercial/Industrial/Forested/Active Construction/Agriculture/Conserved/Abandoned/ Restaurant/Office/Other
Sanitary System Type	Septic/Sewer/Other
Sanitary System Proximity to Watercourse	<50/<100/>100
Septic: Type	Tank and Leach Field/Pump-Up System/Drywell/Cesspool/Other/Unknown
Septic: Condition	Good/Fair/Poor/Unknown/Not Applicable
Septic: Year Installed	Date
Septic: Last Repair	Date

Field Name	Text Suggestions
Septic: Last Pumped	Date
Water Source	Well/Public/Unknown
Water Source Notes	If a well is present, inquire as to its use (example: drinking water, irrigation, etc.). Note any other pertinent information.
Heating Source	Oil/Natural Gas/Other/Unknown
Fuel Storage Condition	Good/Fair/Poor/Not Applicable
Fuel Storage Location	Above Ground /Underground/Interior/Unknown
Fuel Storage Notes	Record the tank contents, size, material, and age. Note any protection measures such as secondary containment, cathodic protection, or automated metering system. In the case of non-residential underground tanks, determine if the tank complies with the registration and testing requirements of the Connecticut Department of Energy and Environmental Protection (DEEP)
Chemical Storage Condition	Good/Fair/Poor/Not Applicable
Chemical Storage Notes	List of chemicals used and stored on the property
Stormwater Management System Condition	Good/Fair/Poor/Not Applicable
Stormwater Management Notes	Description of stormwater management system (example: catch basins, detention areas, drywells, municipal system tie-ins, rain gardens, bioswales). Is routine maintenance conducted?
Livestock/Horses?	Yes/No
Manure Storage Condition	Good/Fair/Poor/Not Applicable
Animal Structure?	Yes/No
Animal Structure Proximity to Watercourse	<50/<100/>100
Floor Drains?	Yes/No/Unknown
Erosion/sediment control issues?	Yes/No
Potential Backflow Concern?	Yes/No
Dumpsite?	Yes/No
Greywater/Wastewater Concern?	Yes/No
Past Violations?	Yes/No/Unknown
Past Violation Years	Text
Other Notes	Add any further information about other conditions that may contribute to water quality issues.



Consider using a digital tool in lieu of paper records to store data and geospatially locate data points such as:

- Sanitary System
- Water source/well location
- Hazardous material storage
- Fuel/oil tank location
- Floor drain location and point of discharge
- Livestock/animal structures
- Public health code violations
- Photo points

For a full solution with web maps, dashboards, and mobile collection, ArcGIS Online/Portal and Field Maps may be the most comprehensive solution to date. ESRI's Survey123 may be an alternative for anyone who is trying to replace paper inspection records with digital records. Other options to explore include QGIS/Qfield, VertiGIS, or Global Mapper.

Public Health Code Violations

The hallmark of the Watershed Inspection Program is to identify potential sources of water pollution as identified in the Public Health Code RCSA Section 19-13-B32: Sanitation of Watersheds. Below includes a summarized list of violations. See Appendix A for the full regulation.

- 19-13-B32(b): Sewage System located within 100 feet of reservoir or 50 feet of watercourse
- 19-13-B32(c): Failing/Inadequate Sewage System anywhere within the watershed
- 19-13-B32(d): Surface Discharge of Sewage anywhere within the watershed
- 19-13-B32(e): Manure Storage/Animal Structures within 100 feet of reservoir or 50 feet of watercourse AND no animal structures anywhere within watershed unless approved by the Commissioner. (See more details in the next section below)
- 19-13-B32(f): Improper storage/disposal of toxic metals, gasoline, oil, pesticide
- 19-13-B32(g): Improper use/storage of fertilizer
- 19-13-B32(h): Improper use/storage of sodium (deicing agent)
- 19-13-B32(i): Erosion Control Problems/Stormwater System Discharge within 100 feet of Watercourse

What is a Watercourse?

The definition of “watercourse” can be found in the water company land regulations definitions: 25-37c-1(s). "Watercourse" means any river, stream, brook, canal, reservoir, lake, pond, marsh, swamp, bog or other surface body of water.

Note: The definition of watercourse does not include wetlands. Even though wetlands may not be included in the definition, a town’s Inland Wetland Commission may not want to be in a position to justify allowing a discharge within a certain distance to the wetlands within a public drinking water supply watershed. Please check with your town to find the wetland review area setback distance.

What are Waters of the State?

Connecticut General Statutes Section 22a-367: “Waters” means all tidal waters, harbors, estuaries, rivers, brooks, watercourses, waterways, wells, springs, lakes, ponds, marshes, drainage systems, and all other surface or underground streams, bodies, or accumulations of water, natural or artificial, public or private, which are contained within, flow through, or border upon this state or any portion thereof.

Note: The definition of Waters of the State includes “drainage systems,” which include stormwater conveyance trenches, typically seen along roads and through agricultural fields.

Animal Structures and Manure Storage Violations (19-B32e)

In cooperation with DPH, DEEP, USDA/NRCS, NCCD and UCONN, a methodology was established for complying with 19-B32(e), which includes two parts:

1. *No stable, pigpen, chicken house or other structure where the excrement of animals or fowls is allowed to accumulate shall be located within one hundred feet of the high water mark of a reservoir or within fifty feet of the high water mark of any watercourse as above mentioned, and*
2. *no such structure shall be located on any watershed unless provision is made in a manner acceptable to the commissioner of health for preventing manure or other polluting materials from flowing or being washed into such waters.*

A violation under 19-13-B32(e) can be categorized by three levels; Tier 1, Tier 2 and Tier 3 as summarized below. The *Animal Structures & Manure Storage Checklist* provided in Appendix F includes key questions to assist the inspector in identifying the appropriate violation level.

- Tier 1: Manure or animals in the water
- Tier 2: Animals, manure piles, uncovered manure piles, denuded animal yards, feed or water areas within 50 feet of, or drains directly to surface water

- Tier 3: Conditions that would NOT trigger a response:
    - Animals greater than 50 feet from surface water
    - Manure piles covered and greater than 50 feet from surface water
    - No denuded areas within 50 feet of surface water

Tier 1 and Tier 2 violations would trigger a certified letter to the property owner indicating the recommended corrective actions along with local resources to assist the property in employing best management practice for animals and manure storage. Examples of Tier 1 and Tier 2 letters are provided in Appendix G. If the violation is not resolved after a specified period, the violation should be escalated to DEEP.

Spills

Respond to each spill according to the individual water utility's Emergency Spill Control Plan. The DEEP's Oil and Chemical Spill Response Unit (860-424-3338) should be notified immediately. Examples of reportable spills include:

1. An overturned or leaking tanker truck containing fuel oil, gasoline, or other hazardous chemicals.
2. Leaking motor vehicle fluids from an automobile accident.
3. Vehicle fires or accidents with fire department wash-down.
4. Sanitary sewer line failure.
5. Harmful chemicals or materials deposited near or in watercourses (example: pesticides, salts, leaking containers, waste oil, etc.).
6. Leaking underground storage tanks.

Reporting Violations

When a violation is identified, the inspector should record the violation and try to resolve onsite. If the violation is unable to be resolved at the site, the appropriate enforcement agency should be notified along with a certified letter to the property owner. The table below provides an agency contact guide suggested for each type of Public Health Code violation identified in RCSA Sec. 19-13-B32.

Public Health Code Violation Contact Guide						
19-13-B32 subsection	**Violation**	**Sanitarian**	**Fire**	**ZEO**	**DEEP**	**DPH**
(b)	Sewage system located within 100 feet of a reservoir or 50 feet of a watercourse	X				Annual report March 1, Otherwise report only egregious violations
(c) & (d)	Failing Septic/Sewage disposal on the surface of the ground	X				
(e)	Any livestock/chicken structure where excrement is allowed to accumulate within 100 feet of a reservoir or 50 feet of a watercourse			X	X	
(e)	Any livestock/chicken structure within the watershed and not approved by the Commissioner			X	X	

Public Health Code Violation Contact Guide						
19-13-B32 subsection	**Violation**	**Sanitarian**	**Fire**	**ZEO**	**DEEP**	**DPH**
(f)	Improper storage/disposal of toxic metals, gasoline, oil, pesticide		X		X	Annual report March 1, Otherwise report only egregious violations
(g)	Improper use/storage of fertilizer				X	
(h)	Improper use/storage of sodium (deicing agent)				X	
(i)	Stormwater system discharge within 100 feet of watercourse and/or erosion issues due to improper stormwater controls			X		

An annual sanitary survey report must be prepared and submitted to the DPH Drinking Water Section by March 1st of the following year. All violations should be noted in the report, with emphasis on repeat or chronic issues. You may send a separate letter listing the repeat violations to the DPH requesting their assistance in resolving outstanding violations. The water utility should also notify the property owner of any violations via certified mail. Contact the local health department and other pertinent agencies periodically to keep abreast of the status of past violations. State agency contact information can be found in Appendix B.

Procedure for Inspections

The entire watershed should be inspected on an annual basis or more frequently if resources allow. Besides serving as a means for identifying water quality issues in a watershed, the watershed inspection program can also serve as an opportunity for the water utility to educate the public. The inspector can discuss land-use activities that may potentially threaten water supply sources and may distribute educational pamphlets. An informed, concerned public is a very effective partner in watershed protection.

Watershed inspectors should be familiar with the statutes and guidelines that apply to watershed protections including the RCSA, State and local regulations concerning underground storage tanks, DEEP guidelines on floor drain discharges, Construction Stormwater General Permits, and the Connecticut Guidelines for Sediment and Erosion Control. The inspector should carry a copy of Section 19-13-B102(b) of the RCSA and Section 25-51 of the CGS.

When conducting residential inspections, it may be appropriate to provide prior notification to watershed residents or to the local police department. Information which may be helpful to provide to the police include the proposed inspection dates and areas to be inspected, a description of the inspector's vehicle, and the names of the persons conducting the inspections. Easily visible company identification, preferably a photo I.D.

should be worn when conducting inspections.

If refused access onto a property, the inspector should politely leave without aggravating the situation. Any such refusals should be documented in writing with the name of the person denying access and their relation to the property. A written request to inspect the property should be sent to the property owner, with copies sent to the DPH and the local health department. A follow-up phone call to the owner should be made to determine if an alternate inspection date can be arranged. If not, request assistance from the local health department. If an imminent contamination issue is known or suspected on the property, seek assistance from the DEEP. Leave any pamphlets or educational materials at the door of the premises and not in the mailbox. In case of loose dogs, you may keep the door of your vehicle unlocked or open during the inspection and carry dog biscuits and pepper spray.

It is useful for watershed inspectors to have a digital camera or smartphone in order to make photographic documentation of violations discovered. Photographs are very helpful in the event enforcement or legal action is necessary to correct a problem. Digital photographs should be digitally filed with the location, date, time, a brief description, and the name or initials of the inspector.

Watershed inspection procedures may differ depending on the type of land use activity you are inspecting. The following sections identify common inspection procedures at residential properties, industrial/commercial properties, and general items to lookout for regardless of land use type. Photos of common watershed inspection violations can be found in Appendix I.

Land Use: General Inspections (any land use type)

A. *Storm Drainage Outlets and Catch Basins*. Check catch basins and outlets for oil sheens (cooking or motor oil), siltation, and hydrocarbon or septic odors.

B. *Waterbodies*. Note the existence of nearby ponds or watercourses and inspect streams, rivers and reservoirs for oil sheens, siltation, or other unusual conditions that may be caused from activities occurring on the inspection site property. Inquire if aquatic herbicides or other pesticides are applied to any waterbodies at the site and if so, inquire whether a DEEP permit has been obtained per Section 22a-66z of the CGS. It may be appropriate to collect and analyze water samples in order to verify and document suspected water quality issues.

C. *Dumping*. Check remote or lightly travelled roads, vacant lots, and wooded areas for illegal dumping, abandoned motor vehicles, fuel or waste drums and other debris. Notify the property owner, municipal staff, or the DEEP if there is an immediate water quality threat and note as a violation.

D. *Tank Trucks*. Note any pesticide tank trucks filling from rivers, streams, ponds, or reservoirs. Request that they cease doing so immediately. It is illegal for pesticide applicators to fill from streams tributary to public water supply. Note any violations and report all such incidents to DEEP and DPH.

E. *Bridge/ Road Improvements, Construction Sites, Gravel Mining, Logging*. When entering an active construction site, request the name and contact information of the personnel who is responsible for site operations. Check for erosion and sedimentation issues and note if erosion controls have been adequately installed and maintained. Check for any potential Construction Stormwater General Permit violations, if applicable. Note any issues concerning debris, storage and handling of fuel, machinery fluids, etc.

F. Encroachments. If inspecting a property adjacent to your water company owned land, check for potential encroachments. Examples of common encroachments include sheds, fencing, earth material dumping, vehicle storage, and clear cuts for property extension. If an encroachment is found, notify the property owner and the land manager at your utility.

G. Erosion and Sedimentation. When entering an active construction site, request the name and contact information of the personnel who is responsible for the erosion and sedimentation controls. Look for signs of erosion and sedimentation that may be affecting nearby watercourses or drainage systems. Work with the direct contact, property owner, local agencies, and the Conservation Districts to see that any erosion issues are corrected. Routinely inspect erosion control measures to ensure they are properly functioning and maintenance is being performed by site personnel. Note any potential violations.

H. *Construction Contaminated Environmental Media.* When inspecting construction sites, look for signs of contaminated fill media which has either been transported to the site, or excavated from the existing site. If contaminated media is found, it must be managed separately upon excavation as hazardous waste and comply with all Hazardous Waste Management Regulations.

I. *Animals.* If livestock such as horses, cows, pigs, llamas, goats, etc., are present, determine their proximity to watercourses and wetlands and if manure or erosion from paddock areas could impact these resources. Check the *Animal Structures & Manure Storage Checklist* (Appendix F) to determine potential violations. For larger operations, review the manure management practices for the site to determine if manure contaminated or nutrient-rich runoff from the site could impact nearby watercourses.

J. *Invasive Aquatic Species and Pesticide Use.* The CT DPH allows certain approved chemicals to be used in public water supply watersheds and aquifer protection areas to control unwanted aquatic vegetation species. Under Section 22a-66z of the Connecticut General Statutes, the CT DEEP issues aquatic pesticide permits and will notify the appropriate utility before these applications take place (see Appendix E). In addition, each applicator is required to provide notification as part of the permit process. These notifications can be an additional way to get an idea of what aquatic vegetation species may be present in a watershed.

Early detection of invasive aquatic species is the best way to prevent the development of larger infestations. It is beneficial to develop an annual monitoring program to search for and identify potential invasive species in public water supply reservoirs and their tributaries. If invasive species are located, it is beneficial to develop a management plan for their control.

Several resources are available to help with identification of these plants;

- Connecticut Invasive Aquatic Plant Guide - https://portal.ct.gov/-/media/CAES/DOCUMENTS/Publications/Bulletins/B1056.pdf?la=en
- Connecticut Invasive Aquatic Plant Program - https://portal.ct.gov/CAES/Invasive-Aquatic-Plant-Program/IAPP/Aquatic-Plant-Survey-Program-for-Connecticut-Lakes
- CT DEEP - https://portal.ct.gov/DEEP/Permits-and-Licenses/Factsheets-Waste-and-Materials-Management/Aquatic-Pesticide-Application-Fact-Sheet

Land Use: Residential Inspections

A. *Sanitary Systems*. Determine if the property is connected to a sanitary sewer system or if an on-site septic system is present. If the property is served by a septic system, determine and note its location. Look for lush grass, gray or black stained ground areas, wet areas or foul odors, which are all indications that the system may be failing. If the occupant is present, inquire about septic tank pumping frequency and stress the importance of having the tank pumped out regularly and avoiding adding chemicals or cleaners to the system. Explain that waste household chemicals should be disposed of at household hazardous waste collection days or collection centers. Note any violations. Local health authorities can be used as a resource for information on septic system modifications, repairs and historic issues.

B. *Heating Source*. If heating oil is used, determine whether the storage tank is located above or below ground. Inquire about the tank location, capacity, and age. Look for vent pipes and signs of leaks such as oil stained soil or pavement. If the tank is located in the basement, inquire if the basement has an impervious floor and if a sump pit or floor drains are present. Note condition of above-ground tanks.

C. *Domestic Drains and Discharge Points*. Check for laundry waste discharging into catch basins, floor drains, yard and footing drains, lawn areas, and adjacent watercourses. Inquire about the location of drainage discharge points for swimming pool backwash water. It is illegal to discharge pool backwash water into septic systems. Pool backwash water should be discharged to a subsurface disposal system other than the domestic system. Floor drain discharges other than to the sanitary sewer or a holding tank are illegal. Discharges to a holding tank or sanitary sewer may require a permit from the DEEP.

D. *Fertilizer/ Pesticide Use*. Explain the potential impacts of lawn and garden chemicals on water supplies and stress that their use should be minimized and only used in accordance to the product label. Recommend that paved areas and storm drains be avoided when applying fertilizers and pesticides and suggest leaving untreated buffer strips between the application area and wetlands or watercourses.

E. *Dumping*. Look for evidence of dumping of motor oil, paint, litter, demolition debris, auto parts, junk cars, etc. Note any violations.

F. *Home Occupations*. Inquire about home occupations on the property and if chemical use is involved. Note the existence of any detached buildings and associated floor drains and inquire about their use.

Land Use: Commercial/ Industrial Inspections

Conditions at commercial and industrial facilities may change significantly during the course of any given year. Consequently, more frequent inspections of these important facilities should be performed in order to monitor for significant changes in site use or operations.

A. *Sanitary Systems*. Determine if the property is connected to a municipal sanitary sewer or if an on-site septic system is present. If an on-site system is used, inquire about the system location, the types of materials discharged to the system, use of tank cleaners, and pumping frequency. Be aware that septic systems at commercial and industrial sites are sometimes illegally used to dispose industrial waste chemicals and hazardous materials.

B. *Heating Source – Fuel Storage Tanks*. If heating oil is used, determine whether the storage tank is located above or below ground. Inquire about its location, capacity, and age. Non-residential underground tanks of 2100 gallons or more must be registered with DEEP and must comply with all testing requirements pursuant to Sec. 22a-449(d) of the RCSA. In addition, all underground tanks of any size containing petroleum liquids or liquids other than those used for on-site heating or intermittent stationary power production (example: waste oil, oil for

resale, and gasoline) must be registered with the DEEP and must also comply with all testing and inventory requirements. Refer to the DEEP's guidance booklet regarding nonresidential underground storage tank regulations or contact DEEP's Storage Tank Enforcement and PCB Unit at 860-424-3374. Also check for compliance with any applicable local and federal regulations for underground storage of fuel, oil, and chemicals. It is recommended that above-ground tanks be situated on a bermed impervious surface designed to contain at least 110% of the volume of the tank. It is also recommended that the containment area be roofed for protection from rain and weathering and lined with a sealant suitable for contact with the stored material. Enclosing the tank on all sides is even more desirable and may also be preferable to the property owner for aesthetic reasons.

C. *Wastewater Discharge*. Determine if there are any illegal wastewater discharges to the environment via floor drains, drywells, storm sewers, septic systems, etc. Also determine if wastewater discharges to the sanitary sewer or holding tanks have been permitted by the DEEP. Note any violations.

D. *Floor Drains*. Determine if floor drains are present and their discharge point. Discharges other than to a sanitary sewer or a holding tank are illegal. Note any violations. In many cases (example: vehicle maintenance floor areas) floor drain discharges to the sanitary sewer or a holding tank will require a DEEP General Permit. If the drain discharges to a sanitary sewer, pretreatment in a 1000 gallon oil and grit separating tank prior to discharge is also required. For more information, contact the DEEP Water Permitting and Enforcement Division.

E. *Water Source*. Determine if there is an on-site well and if so, what it is used for (example: drinking water, cooling water, irrigation). Improperly sealed or poorly located wells may serve as conduits for industrial chemicals to enter the groundwater.

F. *Chemical Handling*. Check to see that raw and waste materials which are potentially harmful to the environment would be properly contained in the event of a spill, leak, or fire. Note any signs of leakage or spills. Recommend that spill containment equipment be stored on-site and that employees be trained to deploy it. Check nearby catch basins, watercourses, etc., for signs of illegal discharges such as oil sheens, hydrocarbons, or septic odors. If evidence of discharges are found, contact DEEP for assistance.

G. *On-Site Hazards*. Look at the general conditions of the site and note problems such as erosion and sedimentation, improperly stored or corroded drums of harmful materials, containers of waste oil, litter, auto parts, junk cars, stained soil, hydrocarbon or septic odors, etc. Note any violations.

H. *Stormwater Drainage Systems*. Determine type of drainage system (example: surface/subsurface system, drywells, French drain, municipal

system, etc.). Examine for signs of contamination and illegal discharges.

I. *Fertilizer/Pesticide Use*. Inspect storage areas of pesticides and fertilizers, especially at golf courses, farms, nurseries, and orchards. Storage areas should have impervious floors with no floor drains and should also be roofed or otherwise covered and secure. Recommend that paved areas and storm drains be avoided when applying fertilizers and pesticides, and that untreated buffer strips be left between application areas and adjacent wetlands and watercourses.

J. *Potential PFAS Generator Sites*. In 2018, the Department of Public Health Drinking Water Section (DWS) issued Circular Letter #2018-20, requiring public water systems who produce a water supply plan to update the inventory of land use activities required under RCSA section 25-32d-3(i)(3) to include identification of potential PFAS generators within areas that are tributary to their sources of public drinking water.

In response to the DPH circular letter, the SWPC developed a 'Source Water PFAS Vulnerability Assessment Form' for water companies as a guideline document to determine potential PFAS generators that may be tributary to their sources of public drinking water (See Appendix H).

During potential PFAS generator site inspections, determine if the sites processes may involve the use of PFAS containing chemicals by utilizing the 'Source Water PFAS Vulnerability Assessment Form'. PFAS compounds may be discharged to the environment via similar outlets as aforementioned in the industrial inspection processes section.

During fire department inspections, assess Class B firefighting foam storage areas and whether prior training activities were conducted on the property. If training was conducted, note the location and how often, as many stations formerly trained with AFFF materials, which contain PFAS compounds. Make sure the appropriate staff members are aware that it is no longer legal to use Class B foam with intentionally added PFAS (PA 21-191, CGS 22a-903a). The graphic pictured on the right may be used as a handout to fire stations.

APPENDIX A

Public Health Code

RCSA Sec. 19-13-B102(b). Standards for quality of public drinking water

(b) Watershed survey. A public water system using surface water as an active source of supply shall make a sanitary survey of the watershed to the intake at least annually. A report on the survey shall be submitted to the Department by March 1 each year covering the preceding calendar year.

RCSA Sec. 19-13-B32. Sanitation of watersheds

Unless specifically limited, the following regulations apply to land and watercourses tributary to a public water supply including both surface and ground water sources.

(a) As used in this section, "sewage" shall have the meaning found in section 19-13-B20 (a) of the public health code: "Toxic metals" shall be arsenic, barium, cadmium, chromium, lead, mercury and silver and the salts thereof: "high water mark" shall be the upper limit of any land area which water may cover, either standing or flowing, at any time during the year and "watershed" shall mean land which drains by natural or man-made causes to a public drinking water supply intake.

(b) No sewage disposal system, cesspool, privy or other place for the deposit or storage of sewage shall be located within one hundred feet of the high water mark of any reservoir or within fifty feet of the high water mark of any stream, brook, or watercourse, flowing into any reservoir used for drinking purposes.

(c) No sewage disposal system, cesspool, privy or other place for the deposit or storage of sewage shall be located on any watershed, unless such facility is so constructed that no portion of the contents can escape or be washed into the stream or reservoir.

(d) No sewage shall be discharged on the surface of the ground on any watershed.

(e) No stable, pigpen, chicken house or other structure where the excrement of animals or fowls is allowed to accumulate shall be located within one hundred feet of the high water mark of a reservoir or within fifty feet of the high water mark of any watercourse as above mentioned, and no such structure shall be located on any watershed unless provision is made in a manner acceptable to the commissioner of health for preventing manure or other polluting materials from flowing or being washed into such waters.

(f) No toxic metals, gasoline, oil or any pesticide shall be disposed of as a waste into any watercourse tributary to a public drinking water supply or to any ground water identified as supplying a public water supply well.

(g) Where fertilizer is identified as a significant contributing factor to nitrate nitrogen occurring in excess of 8 mg/l in a public water supply, fertilizer application shall be made only under current guidelines established by the commissioner of health in cooperation with the state commissioner of agriculture, the college of agriculture of the University of Connecticut and the Connecticut agricultural experiment station in order to prevent exceeding the maximum allowable limit in public drinking water of 10.0 mg/l for nitrite plus nitrate nitrogen.

(h) Where sodium occurs in excess of 15 mg/l in a public drinking water supply, no sodium chlorine shall be used for maintenance of roads, driveways, or parking areas draining to that water supply except under application rates approved by the commissioner of health, designed to prevent the sodium content of the public drinking water from exceeding 20 mg/l.

(i) The design of storm water drainage facilities shall be such as to minimize soil erosion and maximize absorption of pollutants by the soil. Storm water drain pipes, except for crossing culverts, shall terminate at least one hundred feet from the established watercourse unless such termination is impractical, the discharge arrangement is so constructed as to dissipate the flow energy in a way that will minimize the possibility of soil erosion, and the commissioner of health finds that a discharge at a lesser distance is advantageous to stream quality. Special protections shall be taken to protect stream quality during construction.

APPENDIX B

CGS Sec. 25-51. Injunction against injury to water supply or source. Whenever any land or building is used, occupied or allowed to remain in a condition such that it is or could be a source of pollution to any public water supply reservoir or associated watershed, including, but not limited to, any watercourse, wetland or drainage system from which water flows to a public water supply reservoir or any public water supply well or associated aquifer protection area, as defined in section 22a-354h, the municipality or water company, as defined in section 25-32a, having charge of such reservoir or well, or the local director of health or the local director's agents, may apply for relief to the superior court for the judicial district wherein such reservoir, watershed, well or aquifer protection area is located, and said court may make any order in the premises, temporary or permanent, which, in its judgment, may be necessary to preserve the purity of such water. **The municipality or water company, by its officers or agents duly appointed, or the local director of health, or the local director's agents may, at all reasonable times, enter upon and inspect any premises within the watershed tributary to, or aquifer protection area of, such water supply and, if any nuisance likely to pollute such water is found therein, the local director of health or the local director's agent may abate such nuisance after reasonable notice to the owners or occupants** of such premises and their refusal or neglect to abate the same, and the municipality or water company shall be liable for all unnecessary or unreasonable damage done to such premises.

APPENDIX C

CONNECTICUT STATUTES AND REGULATIONS

Connecticut General Statutes

https://www.cga.ct.gov/lco/statutes.asp

Sec. 20-341(a-m)……Licensing of Septic System Installers and Pumpers

Sec. 22a-66z.....Permits for Use of Pesticides in State Waters

Sec. 22a-417.....Discharge of Sewage to Water Supply Impoundment

Sec. 22a-329.....Erosion & Sediment Control Plan

Sec. 22a-430b..... General Permit for Construction Activities

Sec. 22a-423…….. Definition of Sewage

Sec. 25-38..... Carcass of Animal in Water Supply

Sec. 25-43..... Bathing In & Pollution of Reservoirs

Sec. 25-51..... Utility Inspection Authority

Sec. 26-128..... Carp & Goldfish

Regulations of State Agencies- Connecticut Public Health Code

https://portal.ct.gov/DPH/Public-Health-Code/Quick-browse--Public-Health-code-by-section

Sec. 19-13-B1.....Constitution of Public Nuisance

Sec. 19-13-B21.....Manure Storage

Sec. 19-13-B31.....Stagnant Water

Sec. 19-13-B32.....Watershed Sanitation

Sec. 19-13-B102.....Standards for Quality of Public Drinking Water

Sec. 19-13-B102(a-e)…….Subsurface Sewage Disposal Criteria

Sec. 19-13-B102(b)……Utility Requirement for Watershed Inspection

Regulations of State Agencies- Connecticut Dept. of Energy and Environmental Protection

https://portal.ct.gov/DEEP/Laws/DEEP-Regulations-Sorted-By-Subject

Sec. 22a-449(d)……Residential and Nonresidential Underground Storage of Oil & Petroleum Liquids

Sec. 22a-462-3……Registration & Labeling of Sewage System Additives

APPENDIX D

STATE AGENCIES

CT DEPARTMENT OF PUBLIC HEALTH

410 Capitol Avenue
Hartford, CT 06134-0308
https://portal.ct.gov/dph

- Drinking Water Section: (860) 509-7333
- Septic System Information: (860) 509-7296
- Local Health Administration Branch: (860) 509-7660

CT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION

79 Elm Street
Hartford, CT 06106-5127
https://portal.ct.gov/deep

- Pesticide Program: (860) 424-3369
- Solid Waste Permitting, Enforcement and Operator Certification: (860) 424-3366
- Water Permitting and Enforcement Division: (860) 424-3025
- Waste Engineering and Enforcement Division: (860) 424-4193
- Oil/ Chemical Spill:
    - (860) 424-3377 (Non-Emergency)
    - (860) 424-3338 (Emergency)
- Leaking Underground Storage Tank: (860) 424-3376
- Septic System Information: (860) 424-3025
- Aquifer Protection Area Program: (860) 424-3335

APPENDIX E

RCSA Sec. 22a-66z. (Formerly Sec. 19-300u). Permits for use of pesticides in state waters. The Commissioner of Energy and Environmental Protection may issue permits for the introduction of chemicals into the waters of the state for the control of aquatic vegetation, fish populations or other aquatic organisms. Application for said permit shall be on forms provided by the commissioner and shall be accompanied by a fee established by the commissioner by regulations adopted in accordance with the provisions of chapter 54 provided the fee shall be not less than twenty dollars. No permit shall be issued without prior approval, if the proposed application of chemicals involves areas tributary to reservoirs, lakes, ponds or streams used for public water supply, by the Commissioner of Public Health. Each permittee shall be responsible for any and all damages resulting from the applications of any pesticide to control aquatic vegetation, fish populations or other organisms. The commissioner, acting with the Department of Public Health, may establish regulations governing the use of pesticides in the waters of the state, including the marine district. The provisions of this section shall not apply to normal, emergency or experimental operations of the Department of Energy and Environmental Protection, the Department of Public Health or public water supply utilities, except that chemicals may not be applied to waters used for water supply furnished to the public or tributary to such water supply without prior approval of the Department of Public Health. Enforcement officers of the Department of Energy and Environmental Protection and the Department of Public Health may enforce the provisions of this section.

APPENDIX F

Animal Structures & Manure Storage Checklist
RCSA Sec. 19-13-B32(e)

Tier 1

1. Is there an impact to a watercourse? Example: uncontained accumulation of manure and bedding visible immediately next to or in the water or wastewater discharging directly into a watercourse.
2. Is there an obvious flow path from a contamination source to a water body, indicating there has been a flow of contaminated water? Example: contaminated stormwater runoff from a manure pile or animal yard with significant manure accumulation.
3. Do animals have free and unrestrained access to the water body? Example: Lack of fence around the water and the number of animals confined is creating denuded/muddy areas immediately adjacent and into the water.

Tier 2

4. Are animal structures (sheds/barns or similarly functioning structure) within 50 feet of a watercourse?
5. Is there accumulated manure (manure piles or animal yard with significant manure on the ground) within 50 feet of the watercourse?
6. Is the accumulated manure in a storage structure or pile exposed to weather? Example: not roofed or covered in any manner.
7. Does the amount of manure stored in a pile or an uncovered structure exceed the size of a Volkswagen beetle?
8. Is there a berm or other method to divert water away from the surface water or watercourse between the animal structure and the water body that would prevent water from the animal area moving to the water body during normal rainfall events? (The efficacy of this barrier would need to be investigated to see if it is truly protecting the water resource.)
9. Is there an area of more than 15 X 15 square foot (or 225 square feet) that appears to be heavily used by animals (such as visible manure) and does not have permanent grass or other vegetative cover within the 50 foot buffer zone of the water body? (check for areas around feeders or waterers)
10. Are there noticeable areas of manure, feed area, or animal watering area that have become denuded or muddy within the 50 foot buffer zone of the water body?

Summary

- Tier 1: manure or animals in the water
- Tier 2: animals, manure piles, uncovered manure piles, denuded animal yards, feed or water areas within 50 feet of, or drains directly to, surface water
- Conditions that would not trigger a response:
    - Animals greater than 50 feet from surface water
    - Manure piles covered and greater than 50 feet from surface water
    - No denuded areas within 50 feet of surface water

APPENDIX G

VIOLATION LETTER EXAMPLES – TIER 1 and TIER 2

TIER 1 VIOLATION LETTER EXAMPLE

VIA CERTIFIED MAIL

Date

First Last
Address
Town, CT 00000

Property Owner Name,

Your property at __address__ is located in the public drinking water supply watershed area of the __Reservoir name__. During our annual watershed inspection on __date__, as required by Section 19-13-B102(b) of the CT Public Health Code, we observed manure management activities that appear to be impacting a watercourse (i.e. stream, pond, wetland). This condition constitutes a violation of Section 19-13-B32(e), where the excrement of animals is not allowed to accumulate within 50 feet of a watercourse, or otherwise have the potential to impact a watercourse. Please see attached photo.

This letter serves as a notice that you have 30 days to remedy the matter and notify us of the remediation steps you have taken. We will re-inspect the property in 30 days. If we find that the condition has not been remedied, this matter will be referred to CT Department of Energy and Environmental Protection (DEEP) for further investigation.

As stewards of the public drinking water supply, we would like to assist you in exploring ways to better manage manure on your property in a way that both complies to Section 19-13-B32(e) and ultimately protects public health. Below are three agencies that are readily available to assist you at no cost in exploring options for proper manure management.

Natural Resources Conservation Service (NRCS): The NRCS is a non-regulatory agency of the United States Department of Agriculture. For more than 70 years, NRCS has worked cooperatively with farmers and landowners who want to improve conservation and management practices on their land to help protect natural resources.

District Conservationist name
Title
USDA, Natural Resources Conservation Service
Field Office (determine the appropriate NRCS Local Service Center in which serves the municipality where the issue is located; refer to the Connecticut NRCS website)
Address
Phone: xxx-xxx-xxxx
Contact email

University of Connecticut (UCONN) Extension: UConn Extension Centers connect the power of UConn research to local issues by creating practical, science-based answers to complex problems. The Extensions provide scientific knowledge and expertise to the public in areas such as: economic viability, business and industry, community development, agriculture and natural resources.

Contact name
Title
Field Office (determine the appropriate UCONN Extension office in which serves the municipality where the issue is located; refer to the UCONN Extension website)
Address
Phone: xxx-xxx-xxxx
Contact email

Local Conservation District: Connecticut's Conservation Districts are local nonprofit organizations dedicated to assisting private landowners and municipalities with environmental information.

Contact name
Title
Conservation District
Field Office (determine the appropriate Conservation District in which serves the municipality where the issue is located; refer to the Connecticut Conservation Districts website)
Address
Phone: xxx-xxx-xxxx
Contact email

We hope you have success in working with one of these agencies. Please contact me at phone/email if you have any questions or concerns.

The purpose of our annual watershed inspection program is to look for any conditions that could potentially impact water quality of the public drinking water supply and affect public health. More information about our watershed inspection program can be found on our website at company website address. The website also includes links to our Frequently Asked Questions webpage and our Clean Water and Your Health property owner guide to healthy watersheds.

Sincerely,

Position Title

TIER 2 VIOLATION LETTER EXAMPLE

VIA CERTIFIED MAIL

Date

First Last
Address
Town, CT 00000

Property Owner Name,

Your property at address is located in the public drinking water supply watershed area of the Reservoir name. During our annual watershed inspection procedure, as required by Section 19-13-B102(b) of the CT Public Health Code, we observed manure management activities that if not improved, could potentially affect the public drinking water supply.

As stewards of the public drinking water supply, we would like your help in protecting the watershed and public health by ensuring the manure on your property is being managed in the best manner possible to minimize water quality impacts. There are three agencies listed below that are available to assist you at no cost in exploring options for manure management. In the meantime, please keep in mind that manure is best stored undercover and moved off the watershed.

Natural Resources Conservation Service (NRCS): The NRCS is a non-regulatory agency of the United States Department of Agriculture. For more than 70 years, NRCS has worked cooperatively with farmers and landowners who want to improve conservation and management practices on their land to help protect natural resources.

District Conservationist name
Title
USDA, Natural Resources Conservation Service
Field Office (determine the appropriate NRCS Local Service Center in which serves the municipality where the issue is located; refer to the Connecticut NRCS website)
Address
Phone: xxx-xxx-xxxx
Contact email

University of Connecticut (UCONN) Extension: UConn Extension Centers connect the power of UConn research to local issues by creating practical, science-based answers to complex problems. The Extensions provide scientific knowledge and expertise to the public in areas such as: economic viability, business and industry, community development, agriculture and natural resources.

Contact name
Title
Field Office (determine the appropriate UCONN Extension office in which serves the municipality where the issue is located; refer to the UCONN Extension website)
Address
Phone: xxx-xxx-xxxx
Contact email

Local Conservation District: Connecticut's Conservation Districts are local nonprofit organizations dedicated to assisting private landowners and municipalities with environmental information.

Contact name
Title
Conservation District
Field Office (determine the appropriate Conservation District in which serves the municipality where the issue is located; refer to the Connecticut Conservation Districts website)
Address
Phone: xxx-xxx-xxxx
Contact email

We hope you have success in working with one of these agencies. **Please contact me within 30 days to inform me of your progress.** My contact information is: phone/email. Please don't hesitate to contact me if you have any questions or concerns.

The purpose of our annual watershed inspections is to look for any conditions that could potentially impact water quality of the public drinking water supply and affect public health. More information about our watershed inspection program can be found on our website at company website address. The website also includes links to our Frequently Asked Questions webpage and our Clean Water and Your Health property owner guide to healthy watersheds.

Sincerely,

Position Title

APPENDIX H

Potential PFAS Generator Guidelines

Source Water PFAS[1] Vulnerability Assessment Form

This form is intended to be used to assess and inventory land use activities that are of immediate concern to water quality, or have a significant potential to contaminate a public drinking water supply, for delineated source water protection areas, as required by section 25-32d-3(i)(3) of the Regulations of Connecticut State Agencies (RCSA).

SYSTEM: _____ AQUIFER/WATERSHED: _____

PWSID#: _____ SANITARY RADIUS: _____

LOCATION: _____ DATE FORM COMPLETED: _____

☐ NO POTENTIAL PFAS SOURCES IDENTIFIED FORM COMPLETED BY: _____

Potential Contaminant Source (insert additional rows as needed)	**Site Address**	**Description**	**Distance to Drinking Water Source[2]**	**Past History**
Tier 1 Risk	High risk potential; Sites that use AFFF firefighting foams; Landfills (all types); Industries that use PFAS[3] (metal plating, etching, textiles/leather/carpeting, paper and cardboard products, wire manufacturing, industrial cleaning products, surface coatings/paints/ varnishes/inks, plastics/resins/rubber, adhesives, electronics, semiconductors, photolithography, cosmetics/personal care).			
Military Base				
Airport				
Fire Training Area				
Landfill				
PFAS Industry[3]				

Tier 2 Risk	Moderate risk potential; Fire Departments that store AFFF firefighting foams; Wastewater discharges from car washes; Groundwater discharges from major septic systems permitted by DPH or DEEP; Water Pollution Control Facility (WPCF - public sewer system); Sites of significant fires where AFFF firefighting foams were applied (car crash, tanker truck roll-over, gasoline/diesel released to the ground, etc.); AFFF fire suppression systems (possible in large industrial buildings, oil terminals); Application or use of biosolids on agricultural fields.			
Fire Department				
Car Wash				
Major Septic System (>2,000 gal) or Institutional Septic				
Water Pollution Control Facilities (WPCFs)				
Historic fires				
AFFF Fire Suppression System				
Agricultural areas with biosolid application				
Undetermined Risk	The risk of PFAS contamination is undetermined. Land uses identified and listed below may require further investigation and information.			
Comments:				

[1] Per- and Polyfluoroalkyl Substances

[2] Distance to Drinking Water Source - Distance to closest reservoir, tributary, or wellhead

[3] PFAS Industry - Refer to ITRC fact sheets for more information on known industries/manufacturers that may use PFAS

Appendix I - Photos

Non-Compliant/ Violation Photos:

Illicit disposal of industrial cleaner

Industrial compactor leaching to adjacent storm drain (storm drain not pictured)

Hydraulic oil discharge from industrial compactor

Vehicle collision resulting in oil spill. Speedy dry used to absorb oil and soil berm created prior to storm drain to avoid further migration of spill

Oil spill with sand used as absorbent material

Poor manure management resulting in contaminated runoff

Improper Hazardous Waste/ Oil Storage

Drums are not labeled and in poor condition, no overhead canopy or secondary containment, indications of past oil spills in front of drums

Compliant Hazardous Waste/ Oil Storage

Drums are labeled and in good condition, stored indoors on secondary containment

Improper Erosion and Sediment Contols

Excessive erosion from a construction site lacking erosion controls. Note, the silt fencing pictured above was installed after the erosion event occurred

Improperly maintained silt fencing

Proper Erosion and Sediment Controls

Silt fencing properly installed and anchored at the bottom. Additional straw wattle installed as secondary measure

Properly maintained silt fencing with seed/ straw to promote soil stabilization

Consequences of Inadequate Erosion Controls:

Improper erosion controls resulting in sediment runoff during precipitation event

Improper dewatering method resulting in turbid water exiting construction site

Vehicles tracking sediment from construction site resulting from lack of anti-tracking pad

Turbid water caused by agricultural runoff subsequent to a heavy precipitation event