



Septic Systems: Identifying Signs of Problems

Watershed Training Workshop
March 25, 2025

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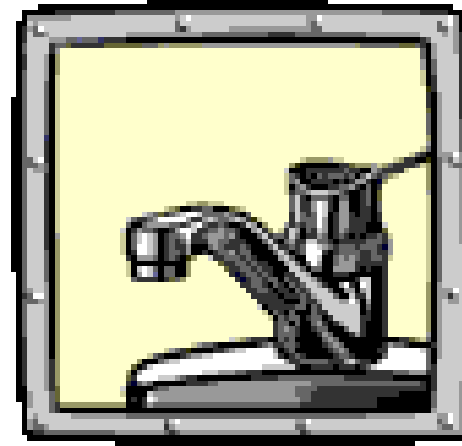
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Domestic Sewage

According to the EPA, the average person in the United States produces around 100 gallons of wastewater per day, which is considered the standard for sewage produced per person per day.

Domestic Sewage is produced in homes and businesses.

- Water and Human Excretions
 - Toilets
 - Bathing Water
 - Shower
 - Tub
 - Cooking and Cleaning
 - Laundry
- Waste From Restaurants and Commercial Buildings



Sewage Treatment

- Domestic Sewage is treated to protect human health and the environment by removing harmful bacteria, chemicals, and other pollutants from wastewater before it is released back into natural water bodies or groundwater preventing the spread of disease, maintaining clean water sources for drinking and recreation, and safeguarding aquatic ecosystems.

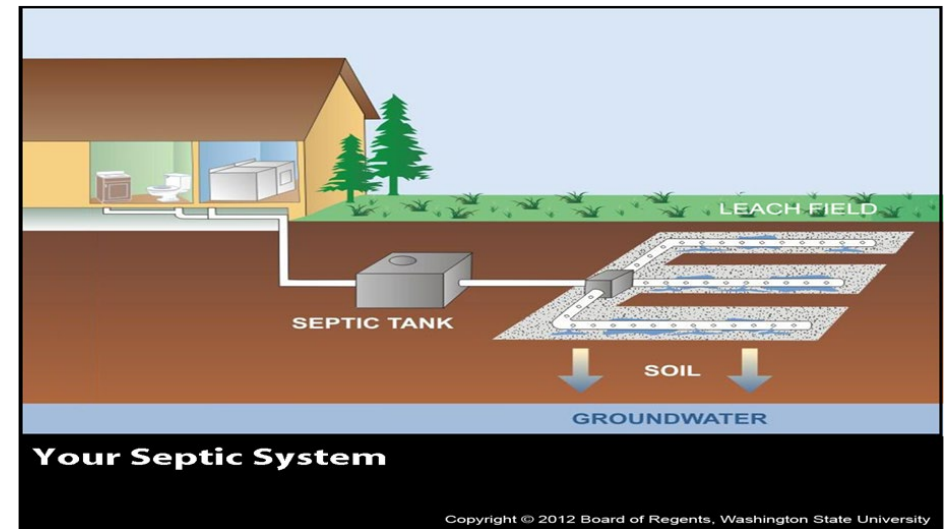


Methods of Sewage Treatment and Disposal in Connecticut

- Public Sewers
 - Public sewers serve approximately **60%** of the CT population.
 - Predominantly in urban areas and areas of high-density development
- Conventional “Septic Systems”
 - Subsurface Sewage Disposal Systems
 - Serve approximately 1.5 million people in CT
- Other Onsite Systems
 - Mini package treatment plants
 - Nitrogen reducing technology, mechanical treatment



Figure 4-2. Sewer Service Areas in Connecticut. (Areas in white are served by subsurface sewage disposal systems.)



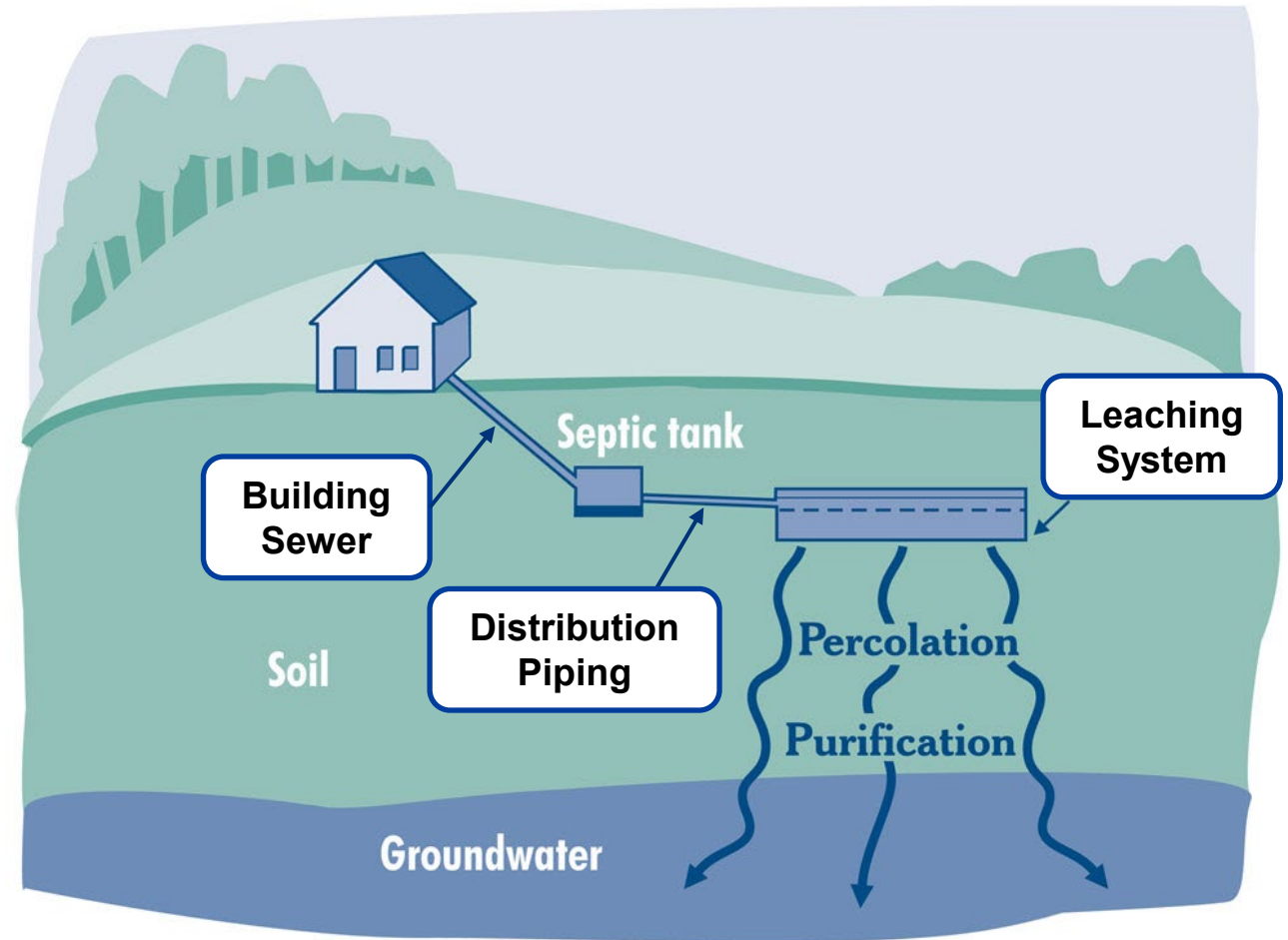
What is a Septic System?

What is a Septic System?

- A septic system is an underground wastewater treatment system used to treat sewage from buildings that aren't connected to a public sewer.
 - Natural aerobic bacteria in the soil remove harmful bacteria, nitrogen, phosphorus, and other contaminants.
- A septic system will treat sewage to reduce the risk of groundwater contamination by:
 - Separating solids from liquids
 - Dispersing wastewater
 - Using soil to renovate the wastewater

Septic System Components

- **Building Sewer**: wastewater exits the building
- **Septic Tank**: buried, water-tight container. Solids settle to the bottom forming sludge, oil and grease floats to the top.
- **Distribution Piping**: moves liquid portion of sewage
- **Leaching System**: consists of leaching product, stone, sand or soil where treatment occurs by microbes
- Necessary pumps, grease traps and groundwater control systems



Septic Tanks

- Separates, settles, and digests.
- Tanks may be **concrete** or **plastic**.



Leaching System

- Treat and disperse liquid from the septic tank into the surrounding soils without breaking out on the surface or polluting the groundwater.
 - Wastewater from the septic tank is directed to the leaching system by the distribution piping.
 - A layer of biological slime is formed on the interface between the soil and the leaching system surface (BIOMAT).
 - The growth of the slime layer reduces the rate at which sewage passes into the soil.

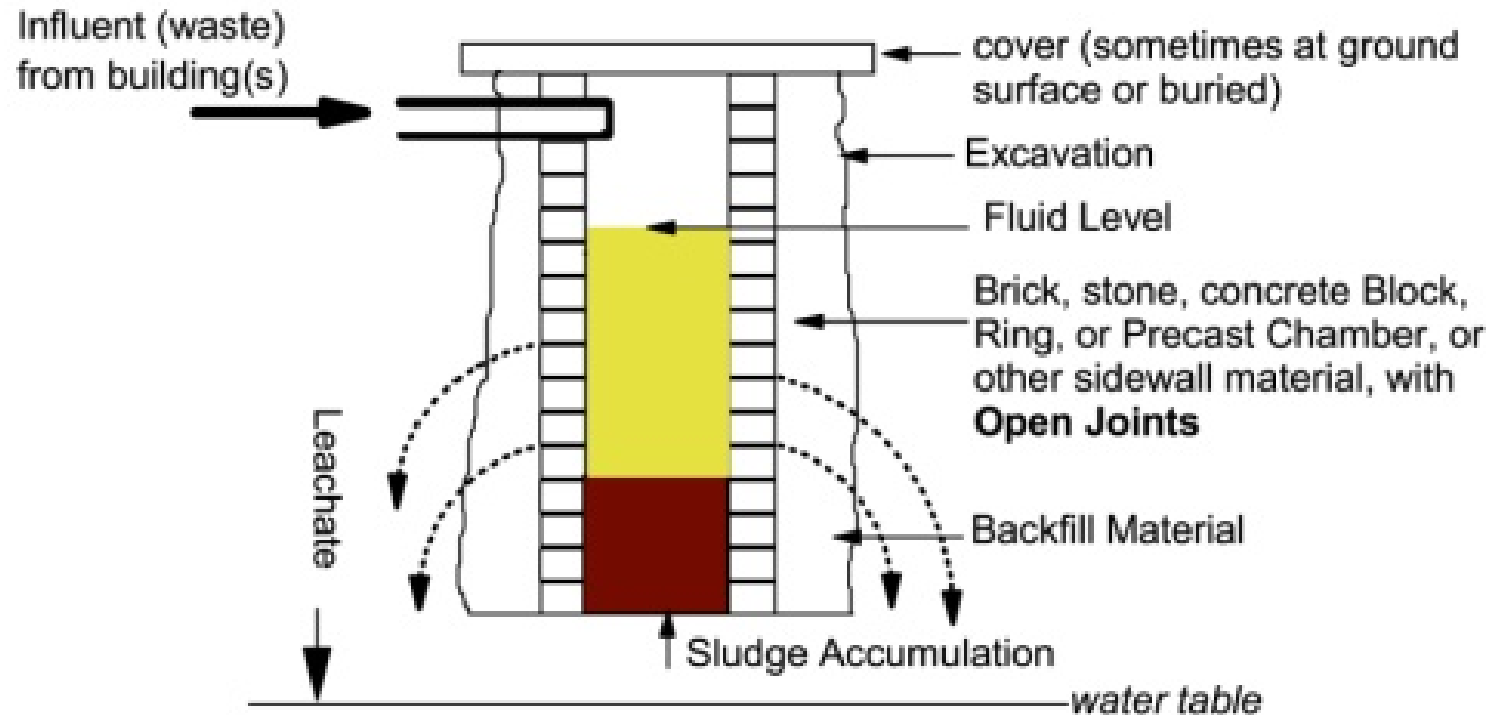
Types of Leaching Products

- Stone trenches
- Leaching galleries
- Leaching pits
- Proprietary products
 - Plastic infiltrators
 - Forms
 - Cardboard
 - Mats
 - Drip dispersal



Cesspools

- Cesspools are no longer allowed in the current Public Health Code.
 - Many, however, still exist.



Watershed Inspections

Besides being a requirement by law, watershed inspections are an important tool used to look for issues that could pollute water resources downstream, including identifying problems with septic systems.

Walkover Inspection

- A "walkover inspection" of a septic system refers to a basic visual inspection where an inspector walks over the leaching area of a septic system.
 - The inspector is looking for any obvious signs of leaks or damage.



Before the Inspection

- Notify the **local health department**
 - Where and when will the inspections be taking place
 - Property owners may call
- Notify the **public**
 - Press release
 - Article in the local paper
 - Direct mailing or e-mail
 - Social media post or community bulletin
- Do your **research**
 - Visit the local health department
 - Know where to look

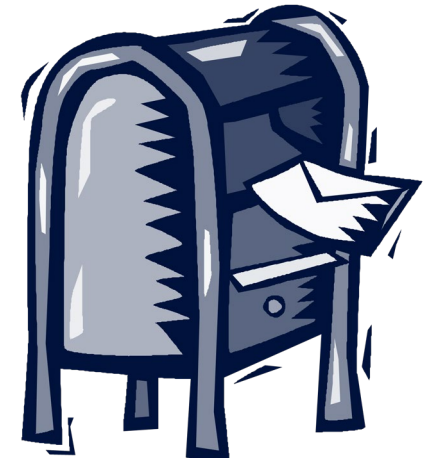
Press Release: 2024 Watershed Inspections to Begin

March 15, 2024



MDC's Watershed Inspection Program

The Metropolitan District (MDC) will be conducting its state-mandated annual watershed sanitary survey and inspection program beginning in April. The purpose of the program, which will continue through November, is to prevent contamination of the MDC's drinking water supplies as a result of septic system failure, erosion, runoff.



Places You Can Rule Out

- Immediately next to the house or building served.
 - Connecticut regulations require a minimum separation distance of at least **ten feet** between the septic tank and the building foundation.
- Near a private drinking water well.
 - Typically, not within a **75' radius** of a private well. There are some exceptions.



Visual Clues of a Septic System

- Visible **Lids, Access Risers, and/or Cleanouts**
- **Junction Boxes** (for systems requiring a pump)



Where is the Septic System?

- There might not be signs.
- You could walk over it and not know it's there.
- That's a good thing!



Signs of Problems

- Patches of lush green grass or pooling of wastewater on the ground surface.
 - Sewage overflowing needs immediate attention.
- Other visual cues: liquid or pooled water around risers, vents, or cleanouts; exposed tank or leaching system components.



Signs of a Problem



Signs of a Problem



Signs of a Problem

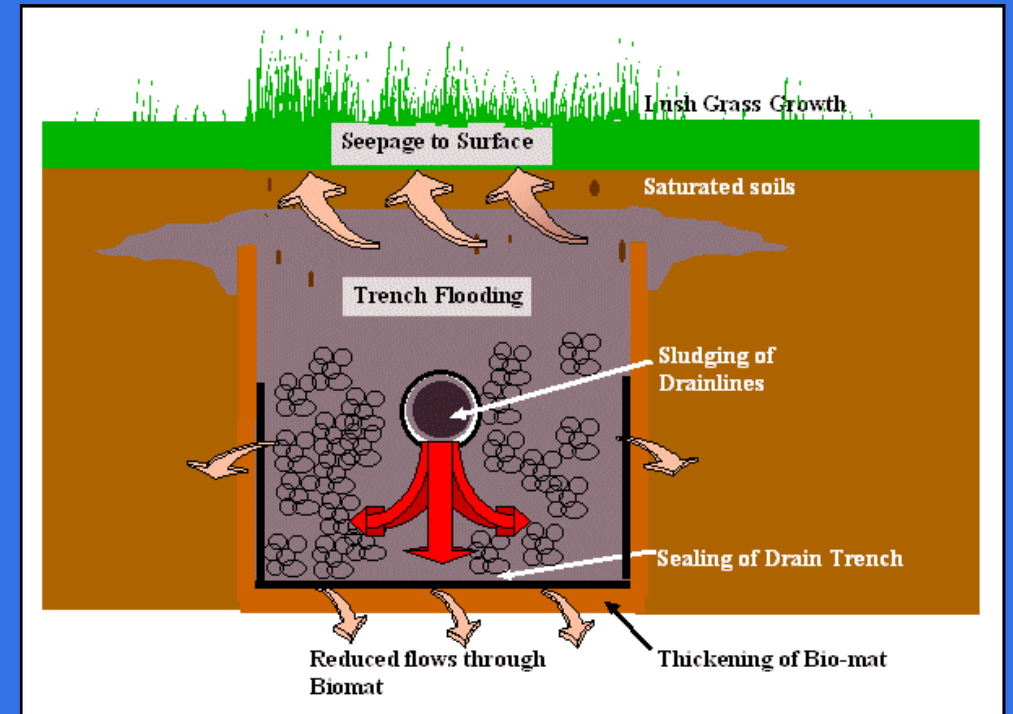


Signs of a Problem, cont.

- Use Your Nose!
 - Sewage odors in storm drainage piping, catch basins, footing drain piping or curtain drain discharges may indicate that sewage is entering these groundwater systems.



Malfunctioning and Failed Septic Systems



Malfunctioning Systems

- Over time, even properly installed systems can experience difficulties if misused or not maintained.
- “Malfunctioning System”
 - Backflow into the building or the septic tank at time of tank cleaning
 - Minor system repair, piping replacement, effluent filter clogged
 - Improper use of the system
 - Flushing newspaper or kitty litter



Failed Systems

- “Failed” systems discharge to ground surface or someone’s well.
- Failed systems can cause a health hazards or nuisance conditions.
- Call the Local Health Department to report septic failures.
 - Local director of health can issue orders to correct failure.
 - Send a report of list of suspected problem sites.
 - Take photos!



Watershed Training Workshop - SSDS

Any questions?

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Environmental Engineering Program
Environmental Health and Drinking Water Branch



*Thank
You!*