

# The Buried Truth About Your Septic System

Presented By:



All-Clear **Septic** &  
**Wastewater** Services



# All-Clear **Septic &** Wastewater Services

Ken Huru

Division Manager

10 Experienced Inspectors

Over 100 Years  
of **Combined** Experience



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**URI FUNCTIONAL  
INSPECTION INSTRUCTOR**

-With locations in  
Norton & Maine



**CERTIFIED**

RI Certified Inspectors

MA Title 5 Inspectors

Licensed Wastewater  
Operators

Elgen

FAST

Singlair

Advantex

Perc Rite

# TODAY'S PRESENTER:

**Bob Silva**

16 Years of Inspection Experience

MA Title 5 Inspector

URI Functional Inspection Instructor

RI Certified Inspector

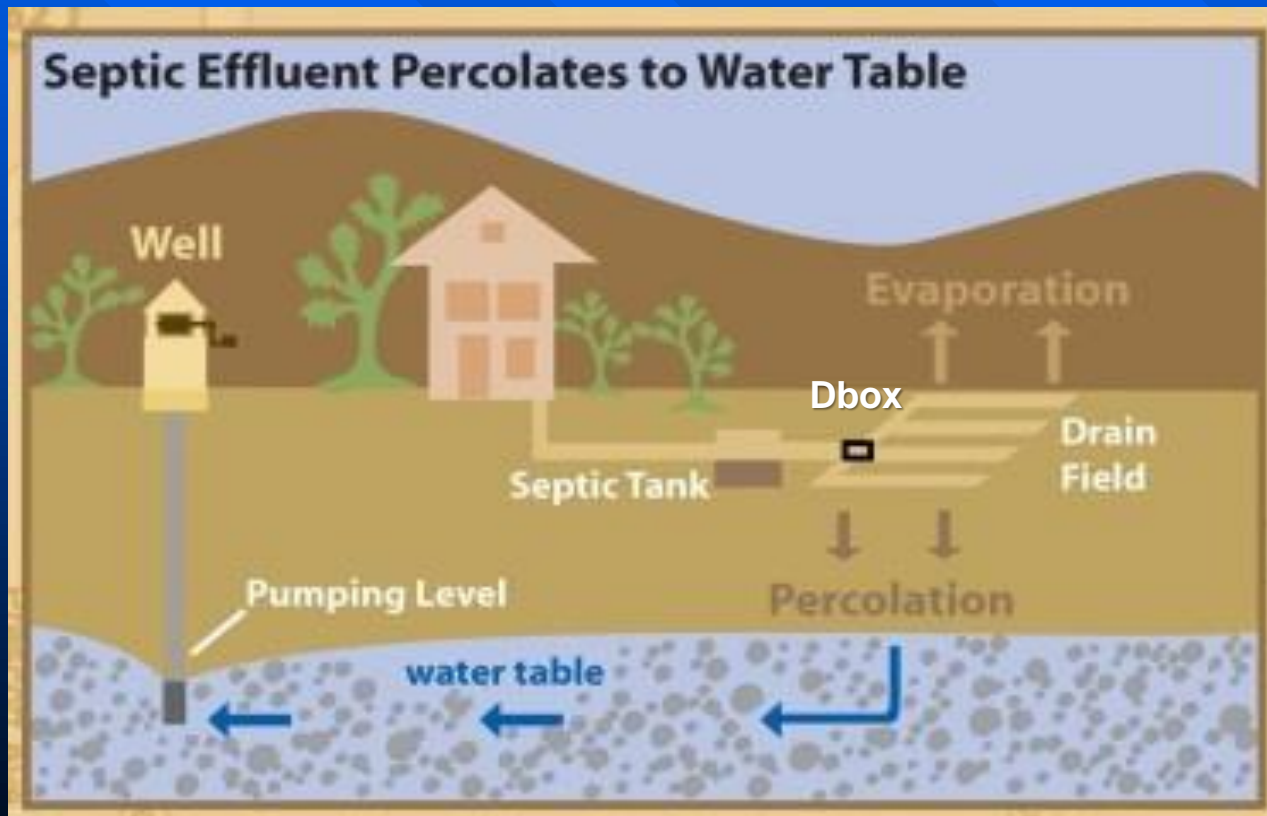
# Outline

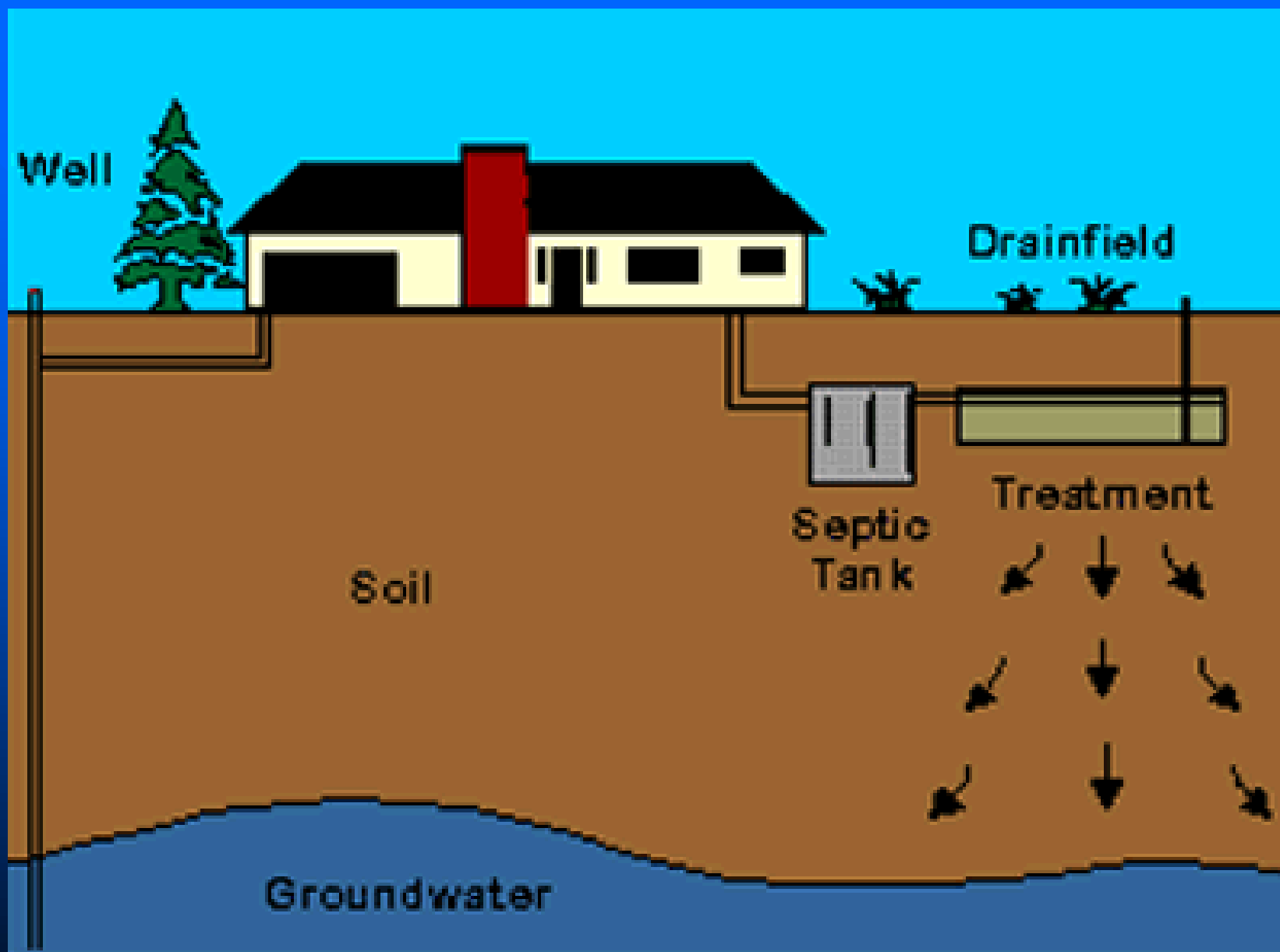
- Septic Systems and their Components
- Title 5 Inspections
  - Process
  - Basic Title 5 Regulations
  - Title 5 Outcomes
- Maintaining your Septic System
  - Do's and Don'ts of owning a septic system
  - Effluent Filters
  - Laundry Filters
  - Risers
- Q/A



# Goal of Onsite Wastewater Treatment

Properly Treat Wastewater Before It Reaches Groundwater





# What does a modern Onsite Wastewater Treatment Disposal System do?

- Collects solids & liquids
- Separates solids from liquid
- Treats wastewater
- Disposes wastewater
  - In an environmentally safe way

**On Site Sewage Facilities (OSSF)** are wastewater systems designed to treat and dispose of effluent on the same property that produces the wastewater.

# Types of Onsite Wastewater Treatment Disposal Systems

- Cesspool (Substandard)
- Conventional
- Pressure Dosing
- Pressure Dispersal
- Innovative/Alternative

# Cesspools & Leach Pits

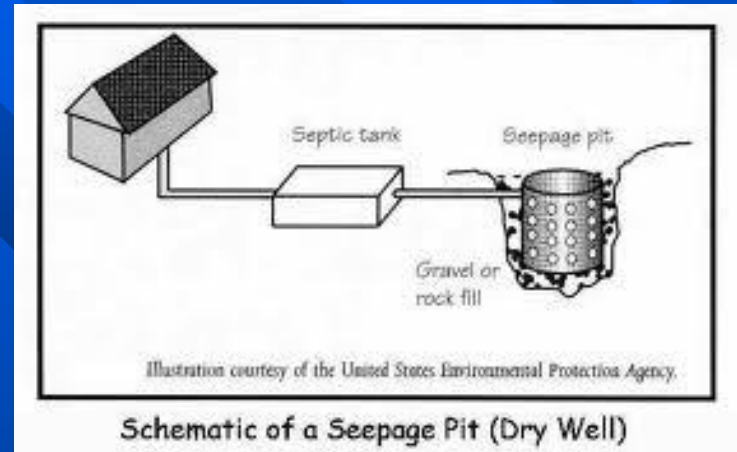
- Outdated technology
- Cesspool systems tend to fail because the solids clog the SAS
- Leach Pits are generally closer to or in the ground water

## Cesspool



In a cesspool system Primary and Secondary treatment occur in one step which allows higher levels of contaminants into the soils.

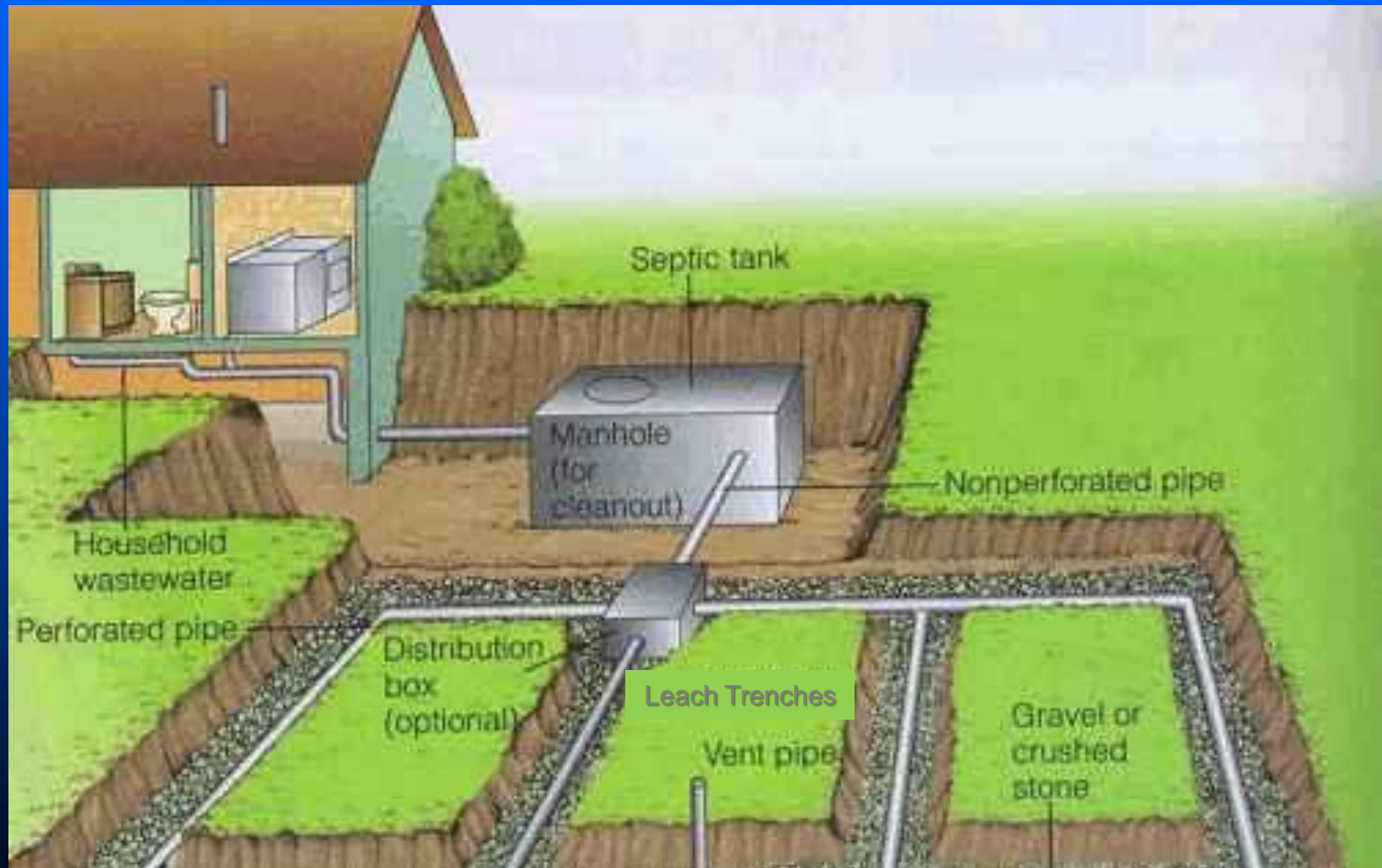
## Leach Pit



Leach Pit system has a septic tank which settles out the solids (Primary Treatment) before the effluent is treated by the soil (Secondary Treatment).



# Conventional Septic System Basics



# Conventional Septic System

## Septic Tank

### ■ Primary Treatment Zone

Separates solids from liquid- by providing at least a 2 day retention time and low turbulence conditions.

- The 2 day retention time and low turbulence goal is the reason taking a shower, doing a load of laundry and running the dishwasher all at the same time is not good for your septic system.

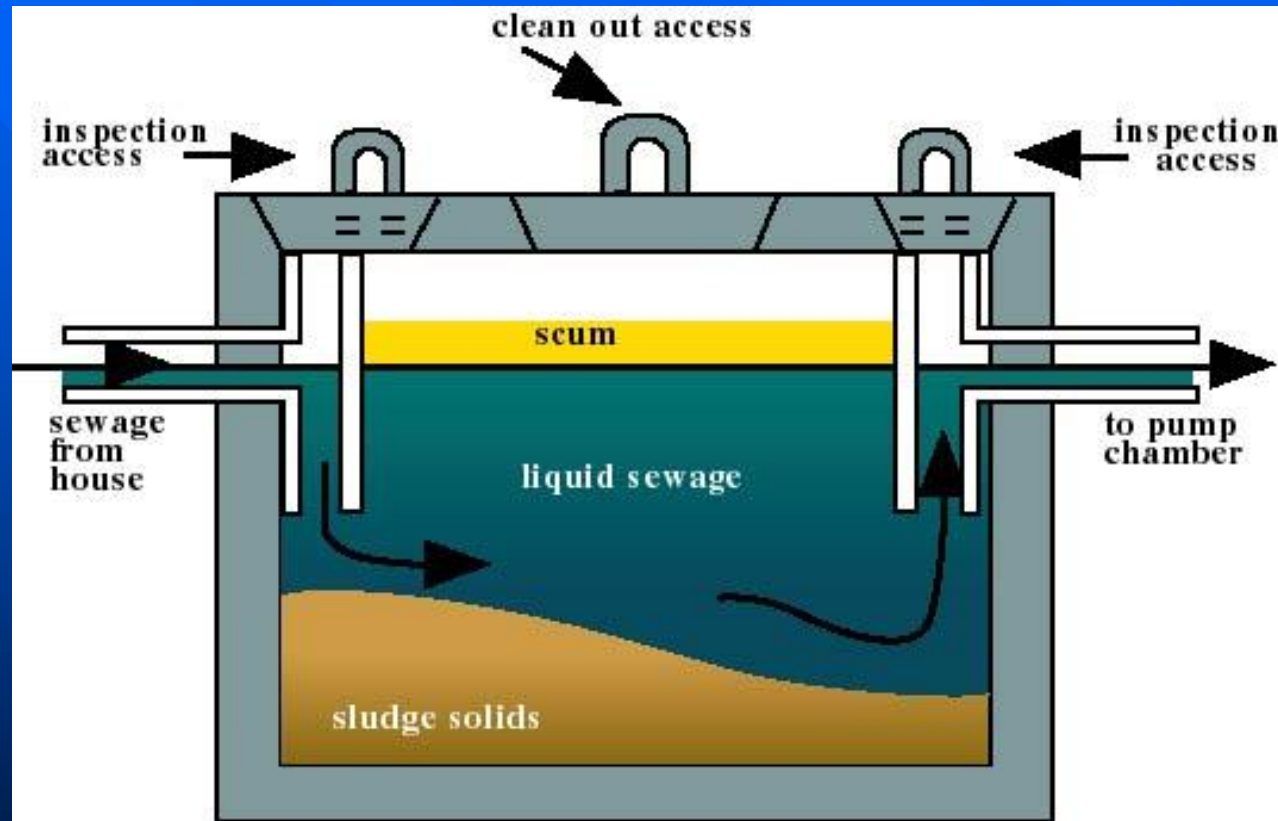
Decomposition of collected solid waste by anaerobic microbes within the septic tank



# Conventional Septic System

## Septic Tank

SHORTER RETENTION TIME = LESS SOLIDS SETTLEABILITY =



MORE SOLIDS GOING OUT TO THE S.A.S =  
SHORTER SYSTEM LIFESPAN



# Conventional Septic System

## Distribution Box

- Creates equal distribution of effluent (wastewater) to the S.A.S components
  - Equal distribution to the soil absorption system components ensures recovery time for the S.A.S if the system is used properly
- The distribution box also acts as a last settling point for solids.



# Conventional Septic System

## Soil Absorption System

- Wastewater is treated in the Soil Absorption System by microbes within the S.A.S and by the surrounding soils as the effluent moves towards groundwater.

-Disposes of wastewater

-Removes contaminants & impurities from the wastewater

-Returns treated water to groundwater



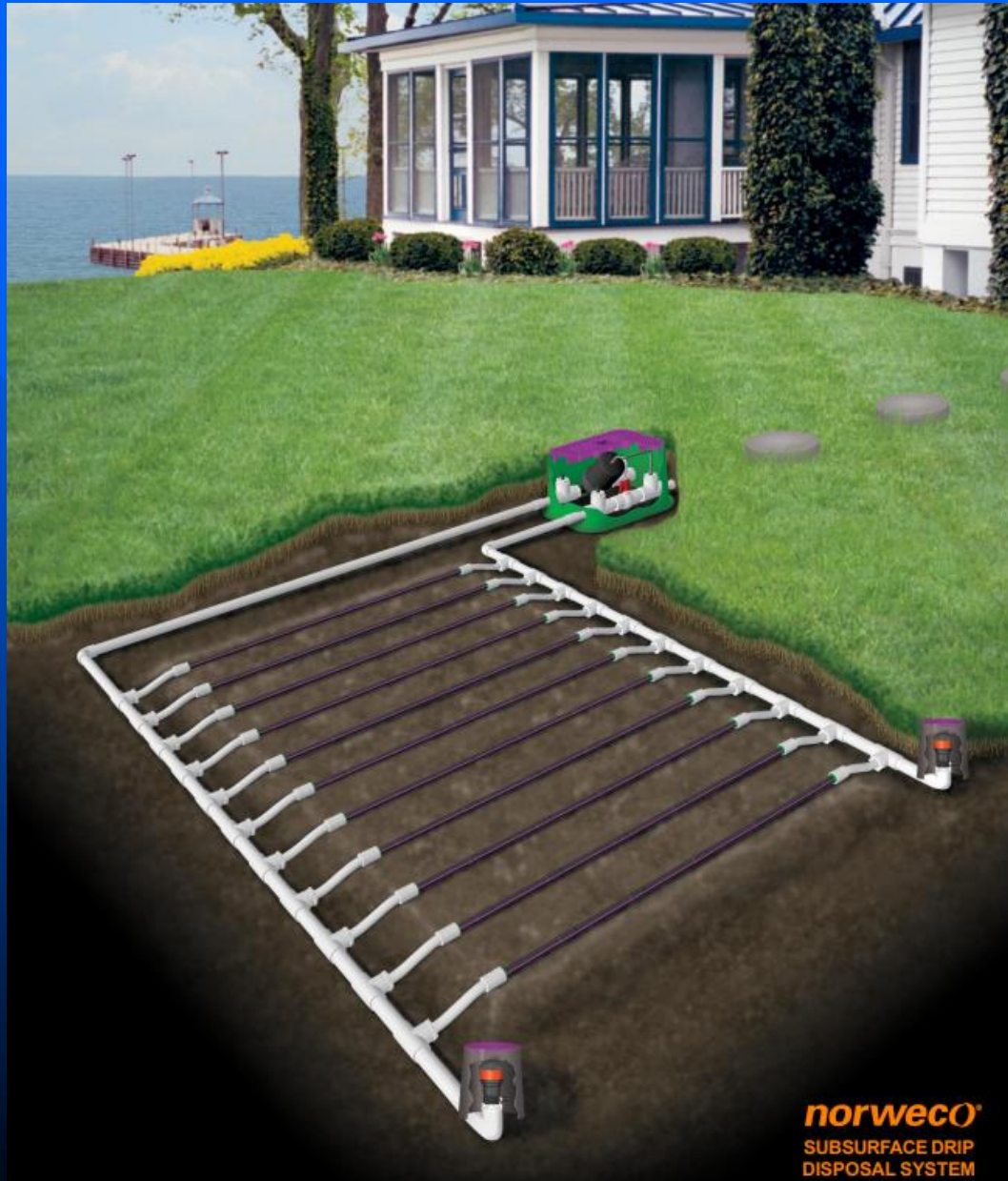


# Conventional Septic System Soil Absorption System





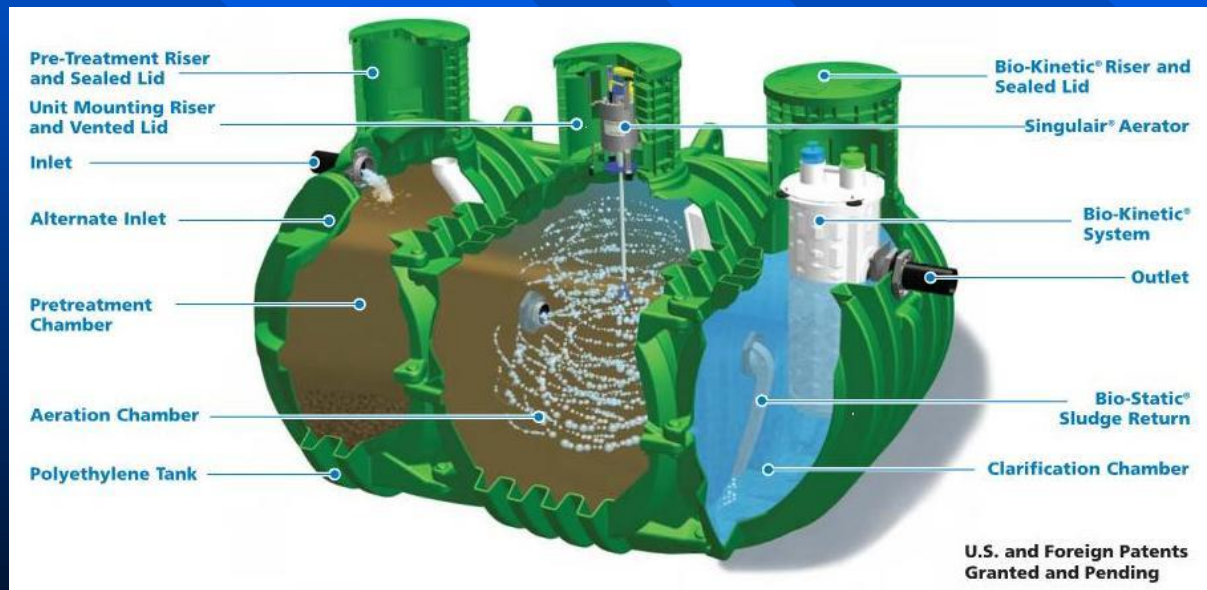
# DRIP IRRIGATION





# Innovative and Alternative Septic System

- Singulair, FAST, Advantex, and other ATU's used in environmentally sensitive areas such as:  
wells, ponds, rivers, high ground water areas





# Conventional Septic System

## Soil Absorption System





# Title 5 Inspections



Title 5 Inspection should be done BEFORE a property is listed.  
**DO NOT WAIT!**



# Purpose of Title 5 Inspections

- A. To identify systems which are failing to operate properly
- B. To educate homeowners about the importance of proper septic system maintenance
- C. To provide an objective basis for requiring upgrades
- D. Regulations specify owner/operator responsibilities for inspection, maintenance and upgrade of systems

- Step 1 - Collect background information on the property, the septic system and the water table in the area.
- Step 2 - Collect information and measurements inside the house including number of bedrooms etc.
- Step 3 - Locate and uncover system components. (Septic Tank, Distribution Box, S.A.S if necessary)
- Step 4 - Take measurements of system components and determine whether any of the Title 5 failure criteria are met.
- Step 5 - Complete Title 5 report on MA DEP approved form and submit to the BOH and client **within 30 days of the Title 5 Inspection.**

# Title 5 Requirements

- A. Required at Transfer of Title or within two years Prior
  - 1. May be extended to 3 years if system has been pumped annually
  - 2. If weather precludes inspection, inspection may be done up to six months after sale so long as seller notifies buyer in writing of inspection requirements.
- B. Required for change in use, or expansion of use of facility served by the system if building or occupancy permit is required:
  - 1. Upgrade of system required if:
    - a. System is a cesspool
    - b. Meets failure criteria
    - c. Is a significant threat to public health safety, environment
    - d. Subject to enforcement order or court order requiring upgrade

# Title 5 Requirements

- C. Transactions not requiring an inspection:
  - 1. Taking a security interest in a property
  - 2. Refinancing
  - 3. Change in the form of ownership among the same owners
  - 4. Adding or deleting a spouse to the deed
  - 5. Appointment of change of guardian, conservator or trustee
  - 6. Transfers between parents and children, full siblings, or when one of the trust beneficiaries has a first degree relationship with the grantor
  
- D. Inspection not required at time of transfer if:
  - 1. Certificate of Compliance for the system has been issued within the past three years and the system was pumped yearly.
  - 2. Owner of the system or buyer has an enforceable agreement with the approving authority to upgrade, connect to sewer or connect to shared system within two years.
  - 3. The town has a DEP approved inspection program.

# Individual Town Policies

## MA Title 5 Allows Towns to Implement Additional Rules

- **Mandatory Health Agent Presence:**
  - Some towns require the town health agent to be witness Title 5 inspections.
- **Pumping, Risers and Filters:**
  - Some towns require pumping and/or adding filters and risers in septic tank during Title 5 inspections.
- **Town Fees:**
  - Many towns require Title 5 Report Fees which range from \$0 - \$125.
- **Well Water Testing:**
  - Some towns require well water analysis report to accompany Title 5 Inspection report.
- **Re-Inspections:**
  - Some towns require re-inspection of vacant properties once normal usage of system has resumed.
- **Water Table Determination:**
  - Some towns require a deep hole water table determination during Title 5 Inspection.

# OUTCOMES

- **PASS**
- **CONDITIONAL PASS**
- **NEEDS FURTHER EVALUATION BY  
LOCAL APPROVING AUTHORITY**
- **FAIL**

# FAILED SYSTEM

- Backup into System Components
- Discharge of Effluent to Ground Surface
- Require Pumping more than 4x / year
- SAS is below high ground water elevation
- Proximity to a Well or Surface Water Supply
- Large Cesspools / Some towns outlaw Cesspools

# Septic System Rejuvenation

- In the case of a failed septic system you have options:

1- Install a new septic system:

(\$15,000 - \$45,000)

2- Septic system Rejuvenation:

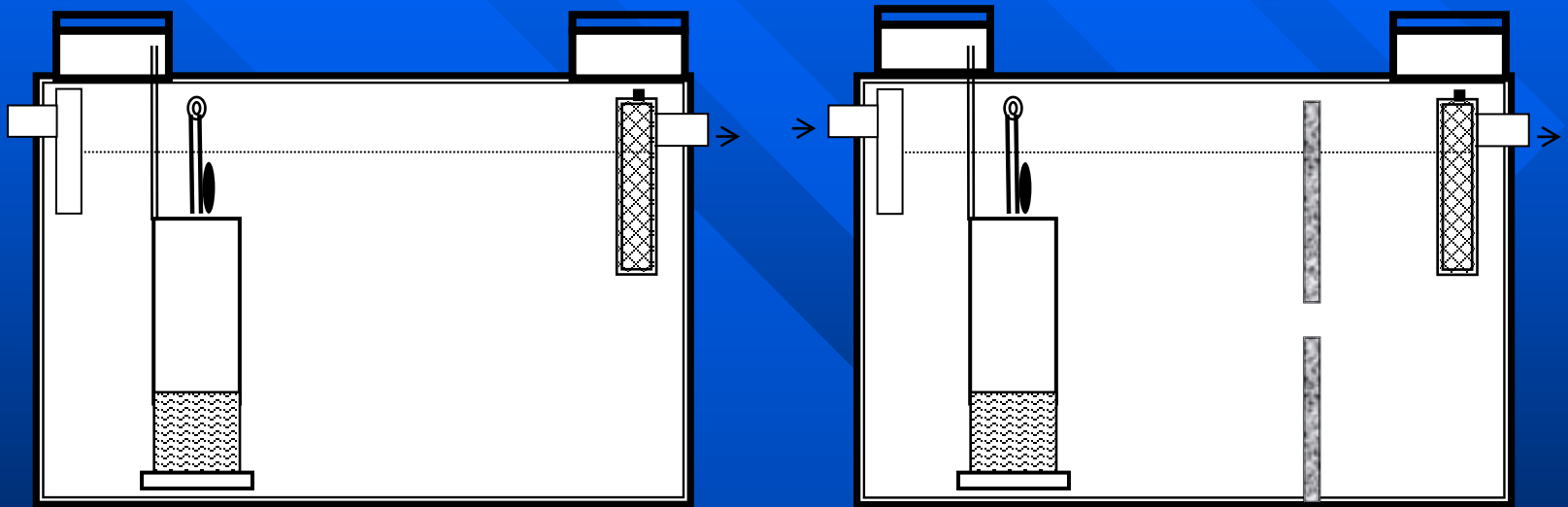
(\$10,000)

There are multiple rejuvenation technologies.



# Septic System Rejuvenation

- Biological Remediation Introduces Oxygen to the septic tank and a media filter within the septic tank



-Works on the basis of Aerobic respiration in the septic tank.

# Answer Is:

# MAINTENANCE

## Life expectancy of Septic system:

- Without Maintenance: 10 - 20 Years +/-
- With a yearly maintenance program and regular pumping-  
**20+ years**

## Average Cost of a New System:

- \$18,000 - \$34,000

## Average cost of Maintenance

- Yearly maintenance visit = \$350 per year

# How Do I Maintain My System?

## Bottom Line

If it didn't come from your  
toilet, sink, tub,  
shower or appliance:

**IT DOESN'T BELONG IN  
YOUR SEPTIC SYSTEM**

# How Do I Maintain My System?

## ■ Common mistakes:

- FOG's: Fats Oils and Grease should not be put into your septic system. Grease and fats should be allowed to harden and disposed of in your trash.
- Do not use a garbage disposal
- Excessive use of anti bacterial soaps and cleaning products can be toxic to the bacteria which treat your wastewater.
- Do not discharge water softeners or water purifications systems into the septic system.
- Do not rinse off paint brushes into sinks or showers.
- Do not use your toilet as a garbage disposal.
- Do not Plant trees near your septic system.
- Do not flush wipes, condoms or feminine products.

Just because it says BIODEGRADABLE  
doesn't mean it's good for you septic system!

# How Do I Maintain My System?

## ■ Good Maintenance Practices:

- Use Low water consumption devices
- Use 1 ply toilet paper and do not flush tissues, paper towels, or sanitary wipes
- Fix Leaky faucets and toilets
- Regularly pump septic tank and distribution box (Massachusetts recommends pumping every 2-3 years depending on use)
- Use a washing machine lint filter
- Divert rainwater away from the S.A.S
- Keep heavy equipment out of the area of the system
- Do not Build immovable structures over any of the system components
- **USE AN EFFLUENT FILTER**
- Install risers over the inlet outlet and distribution box for better maintenance and more thorough pumping
- Use a laundry lint filter.



How Do I Maintain My System?

# Effluent Filter?

Does it work?





# Seasoned Effluent Filter





# Does Using an Effluent Filter Really Make a Difference?



System with an  
effluent filter



System without an  
effluent filter



Septic Tank Pumped Regularly  
D-box Not Pumped  
& No Effluent Filter =



# How Do I Maintain My System?

## Washing Machine Filter?





# How Do I Maintain My System?

## Washing Machine Filter

- To collect lint & scum before reaching septic tank
- To collect inorganic material (dirt, foils, wrappers)



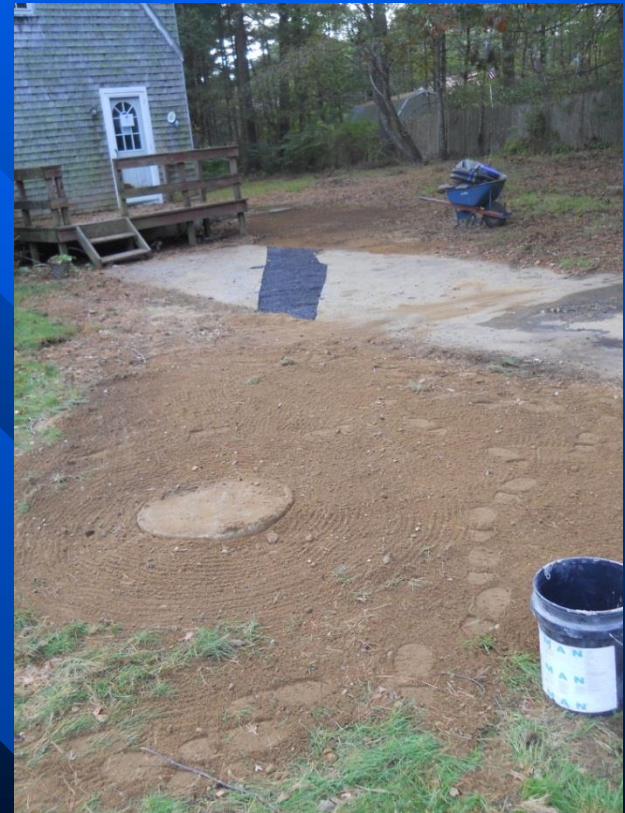
Lint filters are easily installed and maintained

# How Do I Maintain My System?

Risers and Covers?

# How Do I Maintain My System?

Install Risers and covers over the Inlet & Outlet of Septic Tank and Distribution box.









# Why Install Risers & Covers?

Risers allow for:

- Less invasive and faster location of system components.
- Regular Pumping with no digging
- Less invasive and faster troubleshooting if problems occur with the system (ie. Backup of sewage)
- Less invasive, faster and cheaper maintenance of system components
- Less Invasive, faster and cheaper Title 5 inspection.

# Risers & Cover

“ You wouldn’t buy a car with a hood that doesn’t open. So, why would you have a septic system with covers that won’t open.”



1.5 hour excavation, \$110 per hour (4.5 Feet)



1 Minute to take off riser cover, no labor charge (4.5 Feet)



# Risers & Covers



Risers can be installed just below grade so that they can not be seen



# Risers & Covers



Risers and covers can be installed to grade so that they blend in with the lawn, and do not cause problem for mowers or back yard activities.





QUESTIONS?