Westchester County Board Of Legislators
Committee on Environment & Energy
Septic Sub Committee
Meeting Minutes, February 26, 2009

The meeting was called to order at 3:45 pm

In attendance:
Committee Members:
Subcommittee Chair: Hon. Peter B. Harckham
Hon. Michael B. Kaplowitz
Ed Barnett, Putnam County Watershed Information Coordinator; Administrator, Putnam County Septic Repair Program
Gina D'Agrosa, Water Master, Westchester County
Ed Delaney, Bibbo Associates
Susan Gerry, Westchester County Executive's Office
William Harding, NYS Department of State: Executive Director, Watershed Protection and Partnership Council
Michael J. Meyer, Program Manager, Bureau of Water Supply NYCDEP
Leonard Meyerson, Westchester County Department of Health
Hon. Richard Lyman, Board Member, Town of Pound Ridge
Hon. Dan Welsh, Board Member, Town of Lewisboro
Roberta Wiernik, LWV Environmental Committee

Guests & Visitors
Don Heppner, Bedford Record Review
Maureen Eckman, Town of North Salem
Jerry Faiella, Administrator, Town of New Castle
Hon. Don Peters, Supervisor, Town of Yorktown
Natasha Court, Westchester County Department of Health
Mike Budzinski, Putnam County Health Department
Cris Dellaripa, Project Coordinator, Septic Inspector- Septic Repair Program
Bob Eichinger, Green Septic Solutions, Amenia, NY
Vincent Giorgio, NYCDEP
BOL Staff: Wendy Wild

After welcoming the group and asking those present to introduce themselves, Peter announced that this meeting would be dedicated to a special presentation on alternate septic technologies, given by Ed Barnett and Ed Delaney.

After the presentation there was some discussion on the information presented. And the possibility that site visits to view the technologies discussed in Putnam County might be possible.
In lieu of formal minutes, a copy of the presentation is attached (see below)

The next meeting is scheduled for Thursday, March 19th at 3:30pm.

The meeting adjourned at 4:55pm.

Respectfully submitted by Wendy Wild

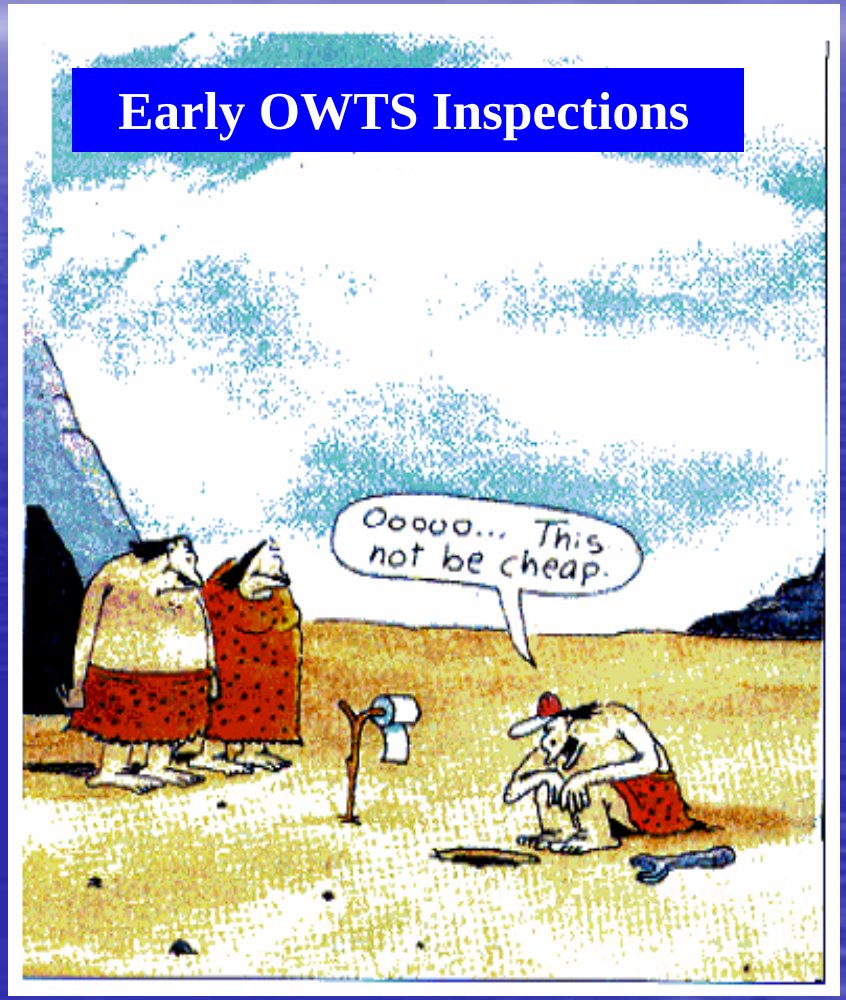
Putnam County Septic Repair Program (PCSRP)

- **Edward Barnett** -Watershed Information Coordinator and Septic Repair Program Administrator #845-278-8319 e-mail edward.barnett@putnamcountyny.gov
- **Mike Budzinski PE.** - Director of Engineering for PC Health Dept. #845-278-6130 e-mail mike.budzinski@putnamcountyny.gov
- **Cris Dellaripa** -P.C.S.R.P. Projects Coordinator/Inspector #845-278-8313 e-mail cris.dellaripa@putnamcountyny.gov

Onsite Wastewater Treatment Systems (OWTS)

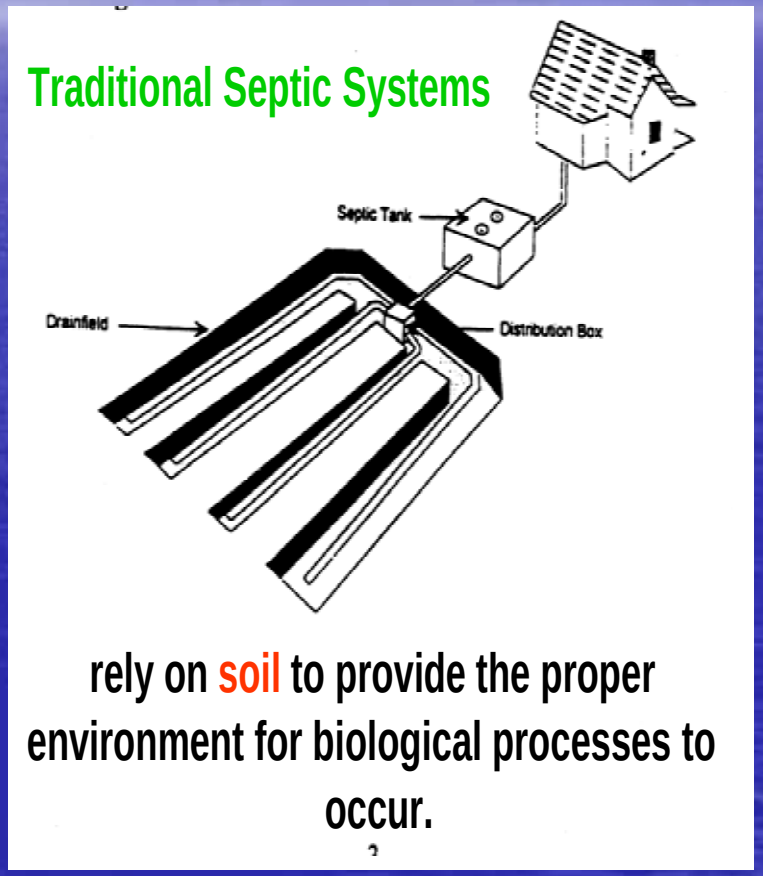
Formerly known as...

Septic Systems



Septic system 101

- Engineering
- Collection
- Treatment
- Distribution
- Absorption
- Alternative?



Household Collection System

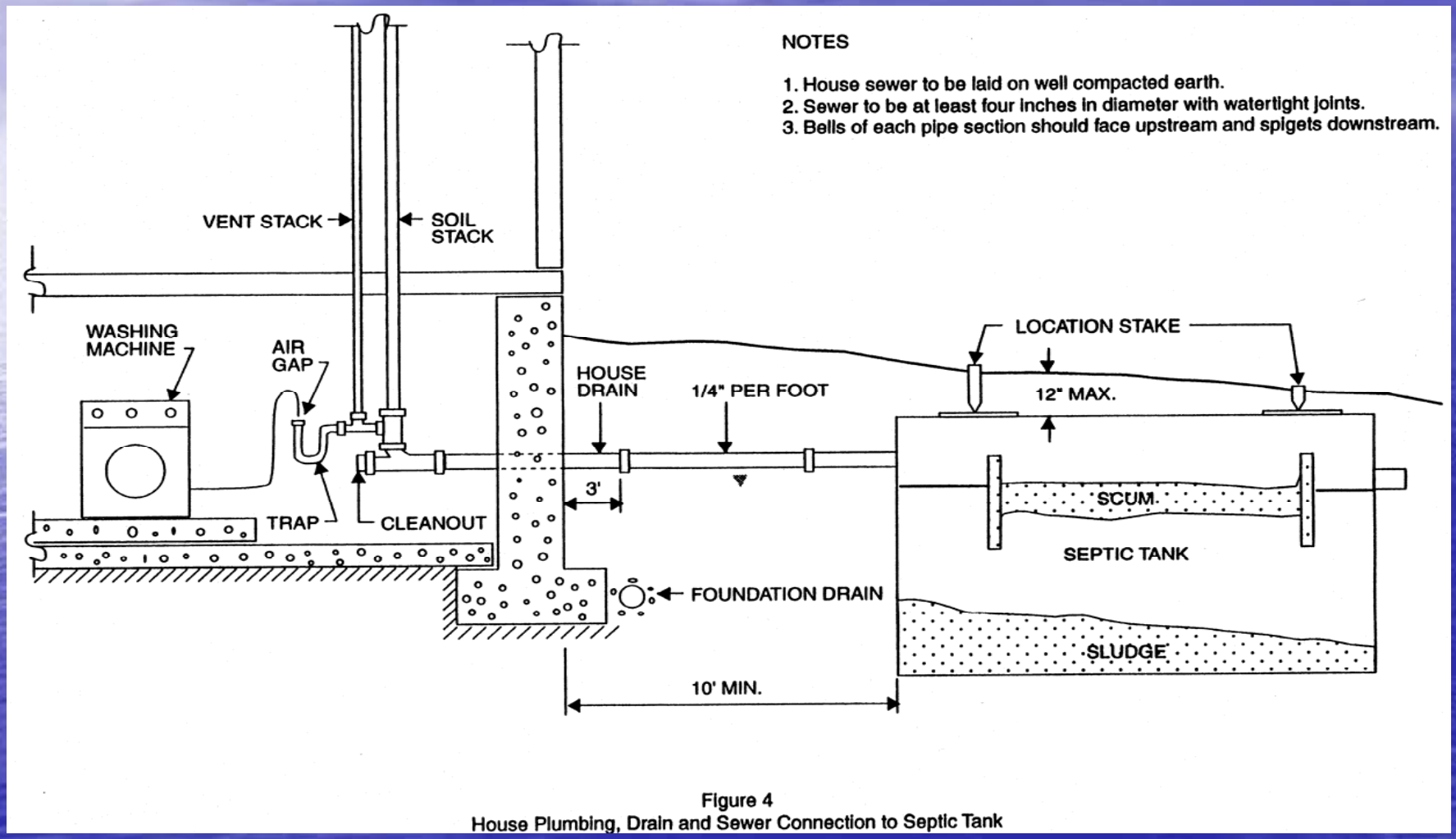


Figure 4
House Plumbing, Drain and Sewer Connection to Septic Tank

House drain to one outlet

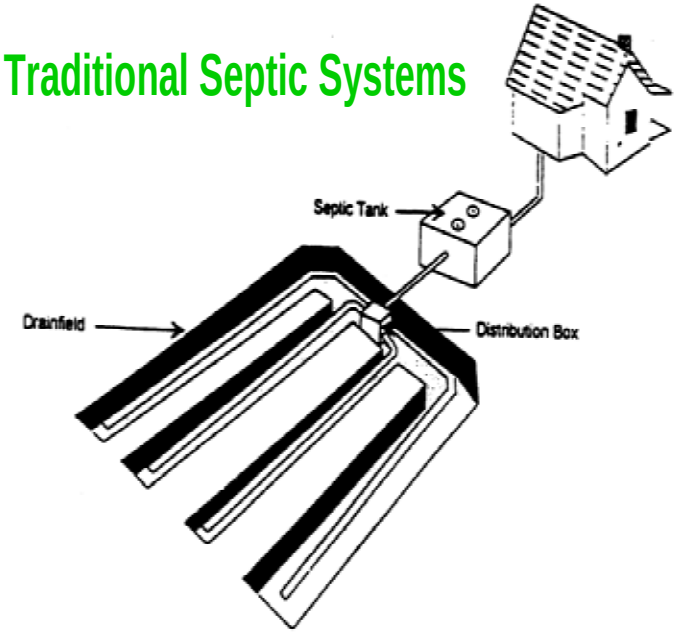
HOUSE SEWER

- Size
- Material
- Grade
- Venting
- Joints
- Separation

Standing Water????

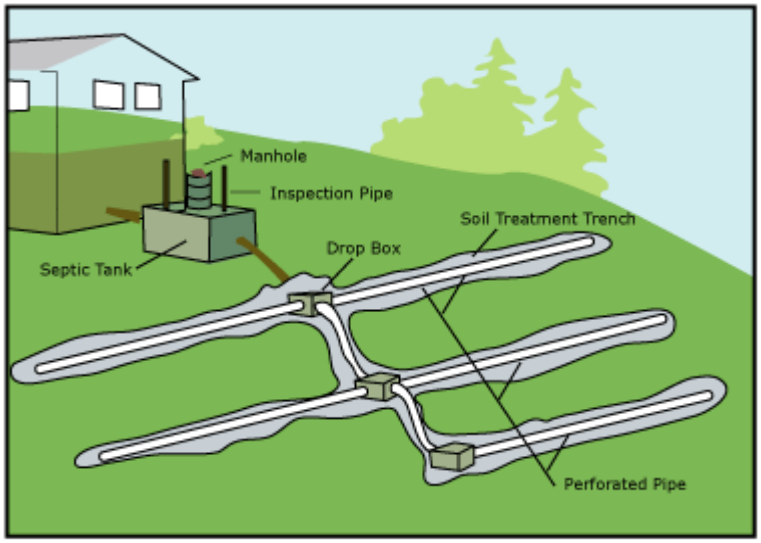
Conventional Septic System

Traditional Septic Systems

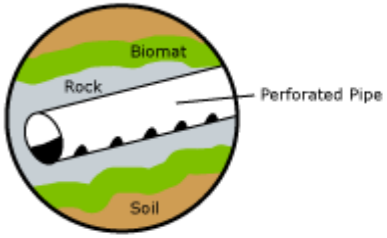


rely on soil to provide the proper environment for biological processes to occur.

Figure 10 - Trench Filtering



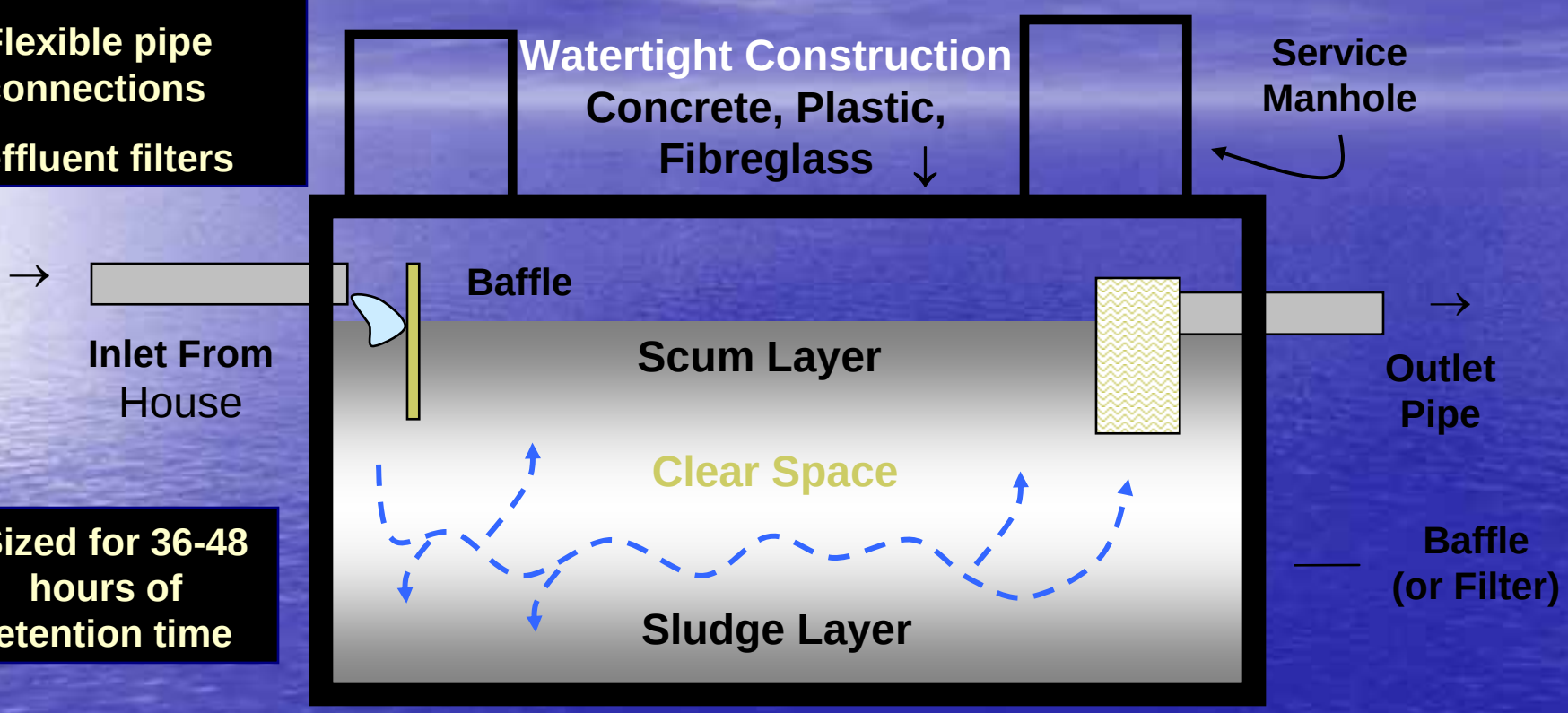
Cross-Section of Trench



Primary Treatment

Septic Tank enhancements:

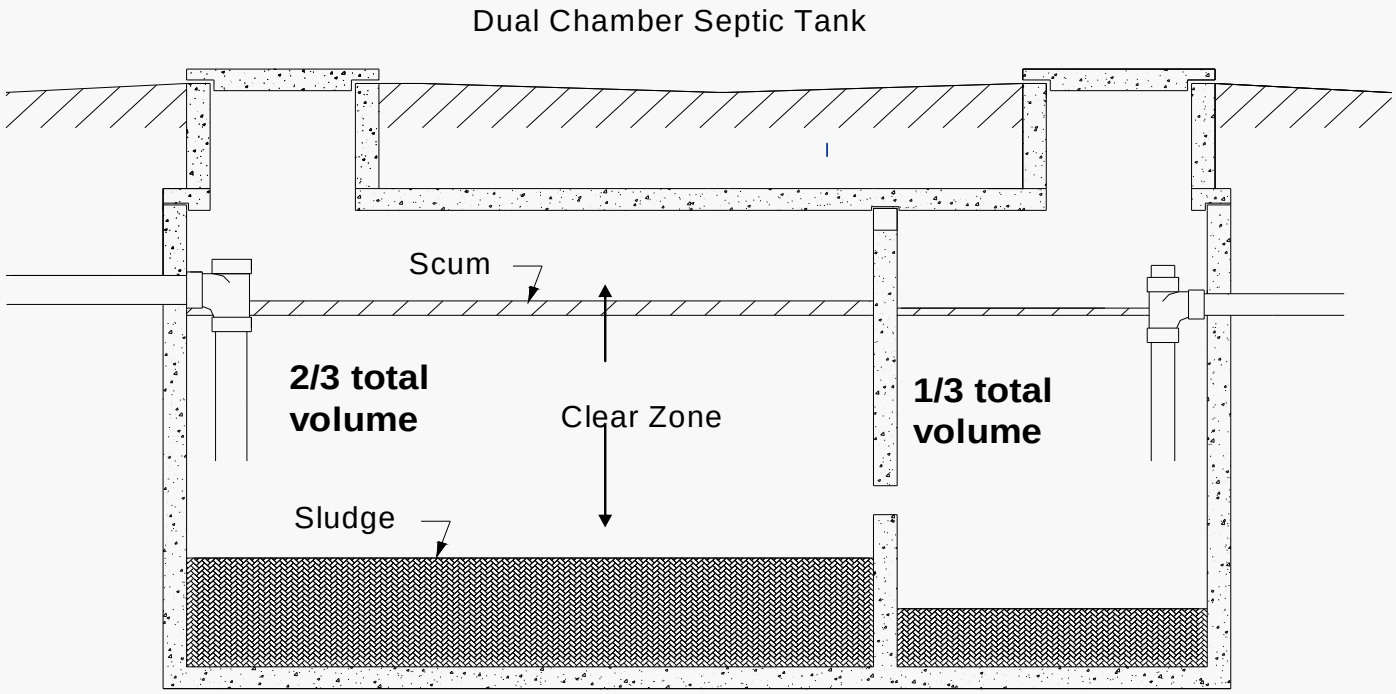
- Dual Compartment
- Flexible pipe connections
- effluent filters



*Sized for 36-48 hours of retention time

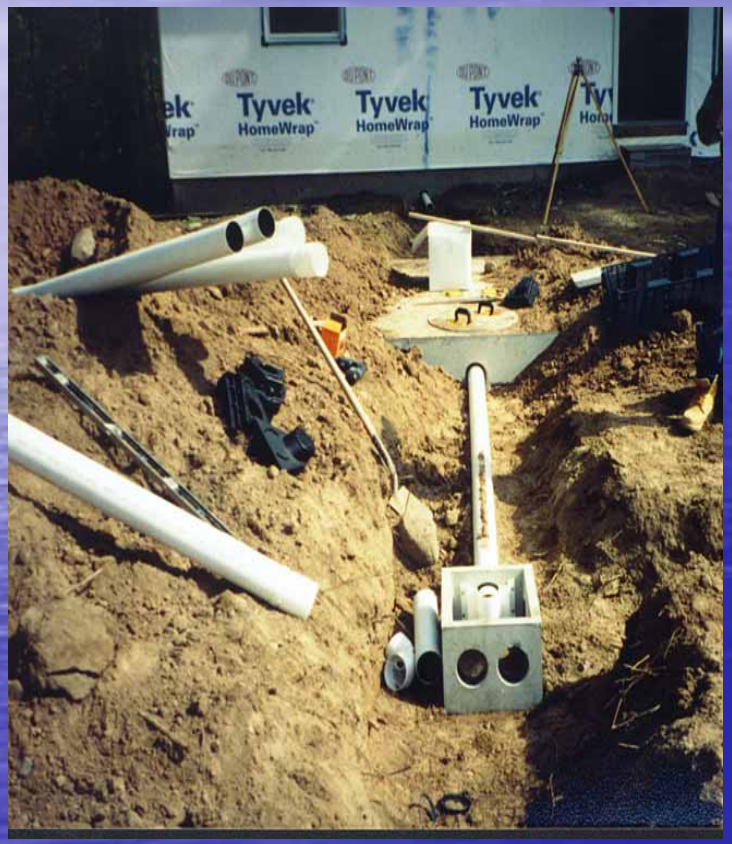
- Allows for solids to settle (sludge) and floatable material to rise (scum)
- Effluent filters are used to further reduce effluent “strength” and “burps”
- Some anaerobic biodegradation occurs in the septic tank
- Add 250 gallon capacity for “expected” garbage grinders or spa tubs
- See Table #3 in Appendix 75A for Minimum Tank Capacities

Two Compartment Tank

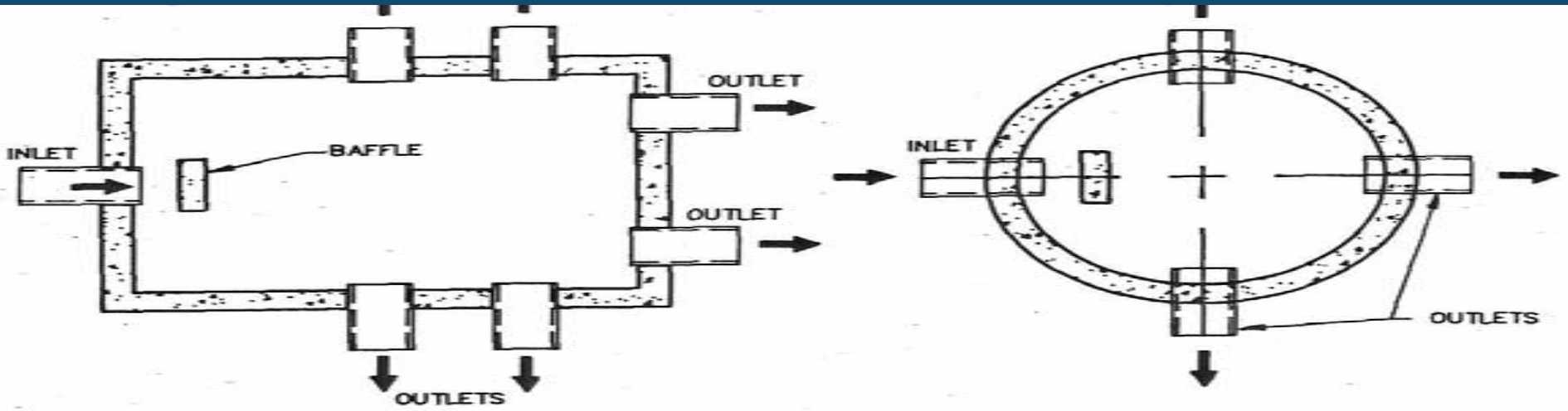


Typical Installation with Cleanout

Distribution Box



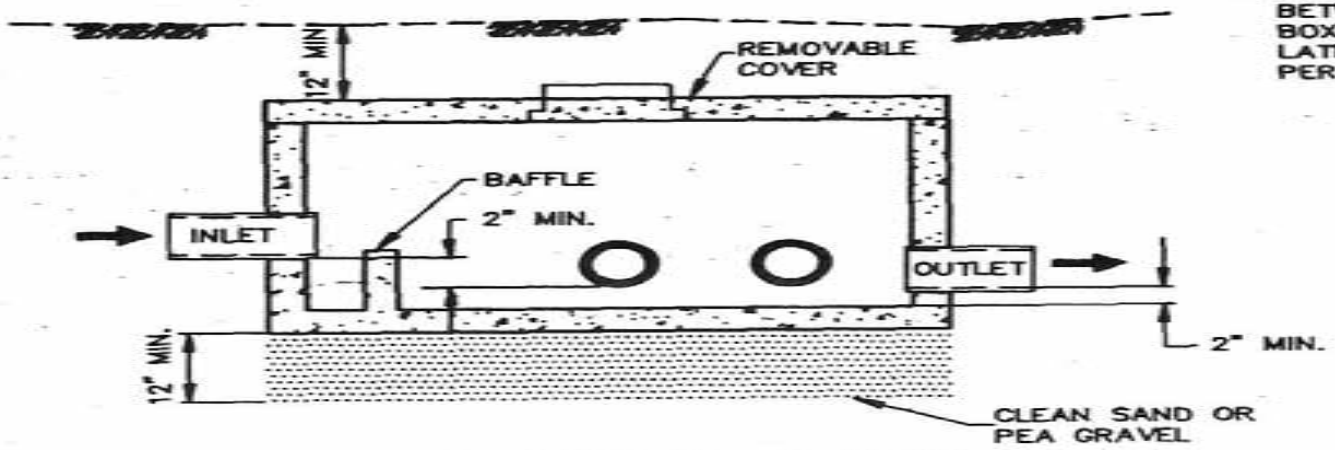
- Level / distribution control
- Don’t forget to bed the box



PLAN VIEW

NOTES:

1. PIPE JOINTS TO BE SEALED WITH ASPHALTIC MATERIAL OR EQUIVALENT.
2. INVERT ELEVATIONS OF ALL PIPES MUST BE EQUAL.
3. THE SLOPES OF OUTLET PIPES BETWEEN THE DISTRIBUTION BOX AND DISTRIBUTOR LATERALS SHOULD BE 1/8" PER FOOT.



CROSS-SECTIONAL VIEW

DISTRIBUTION BOX DETAIL

WITH ASPHALTIC MATERIAL OR EQUIVALENT.

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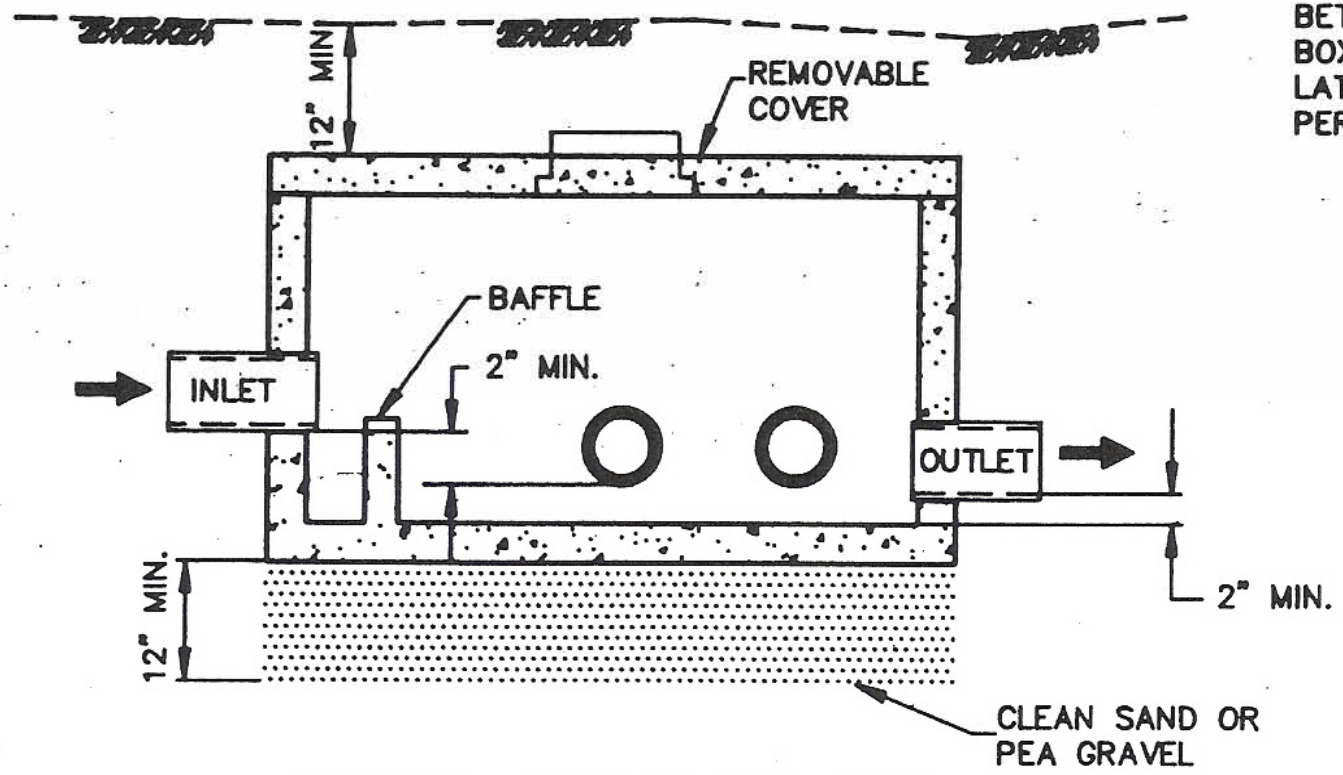
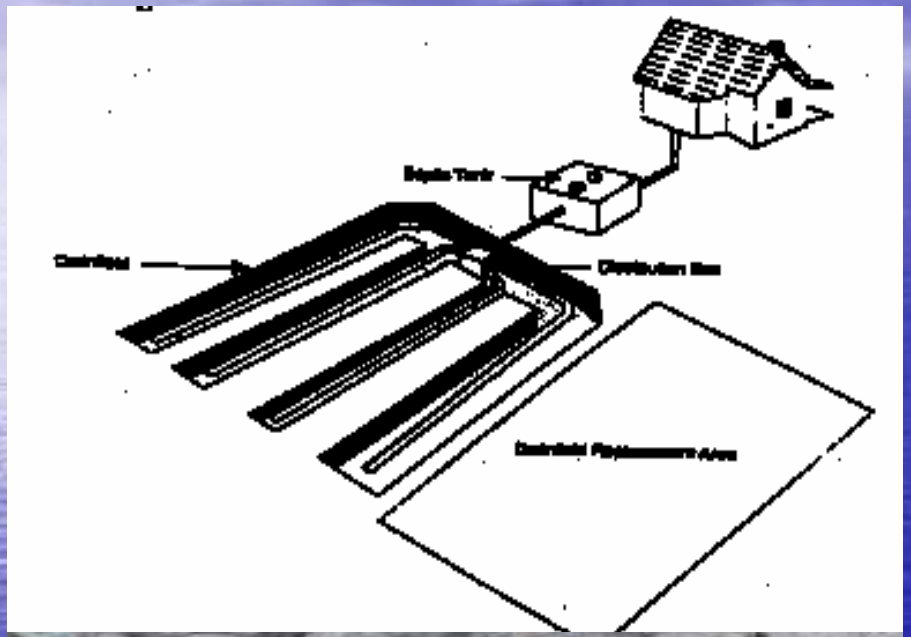
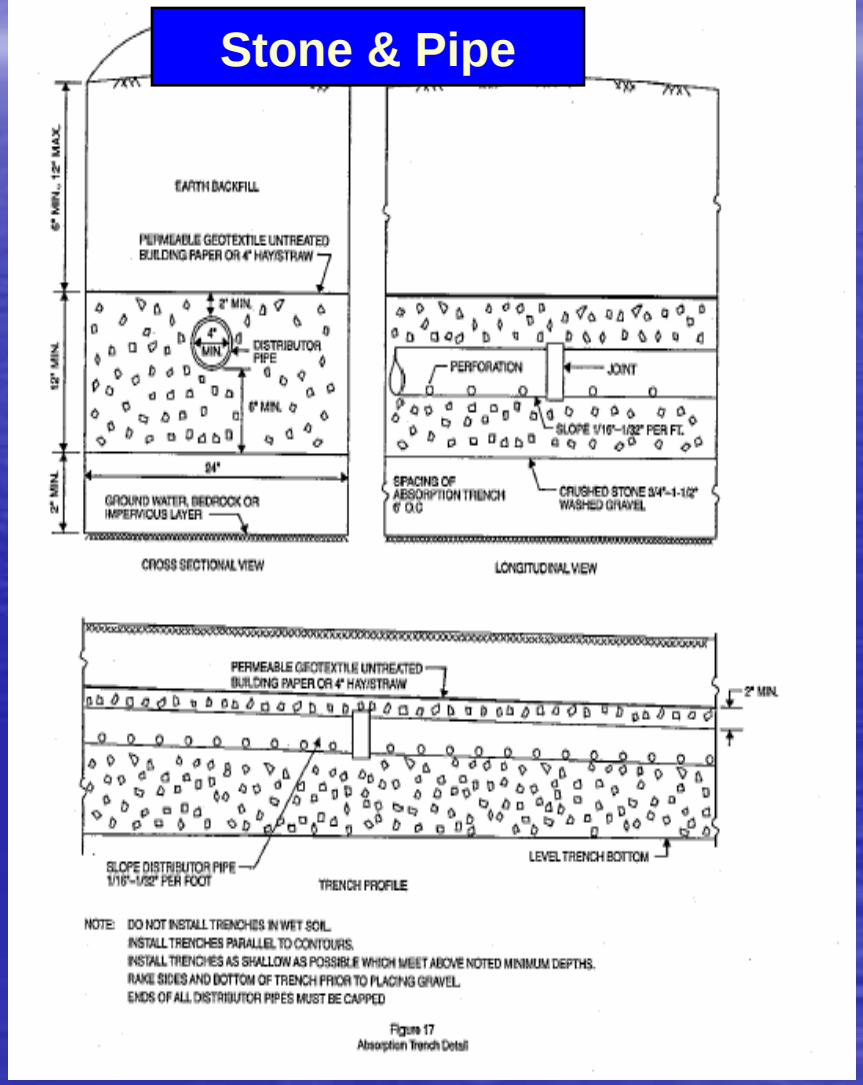


CROSS-SECTIONAL VIEW

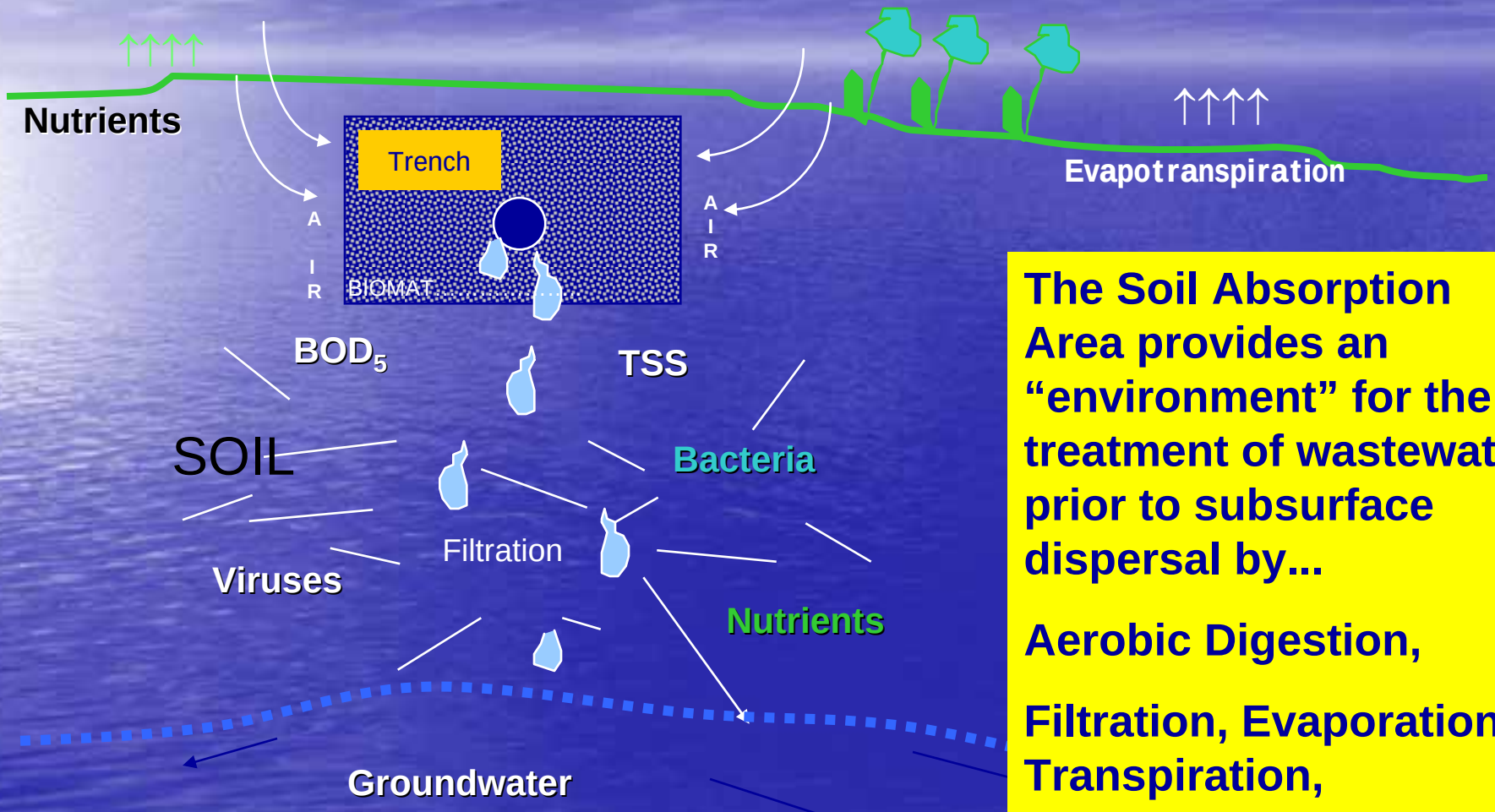
DISTRIBUTION BOX DETAIL

Conventional Absorption Trench System





Treatment & Dispersal



The Soil Absorption Area provides an "environment" for the treatment of wastewater prior to subsurface dispersal by...

Aerobic Digestion,

Filtration, Evaporation Transpiration,

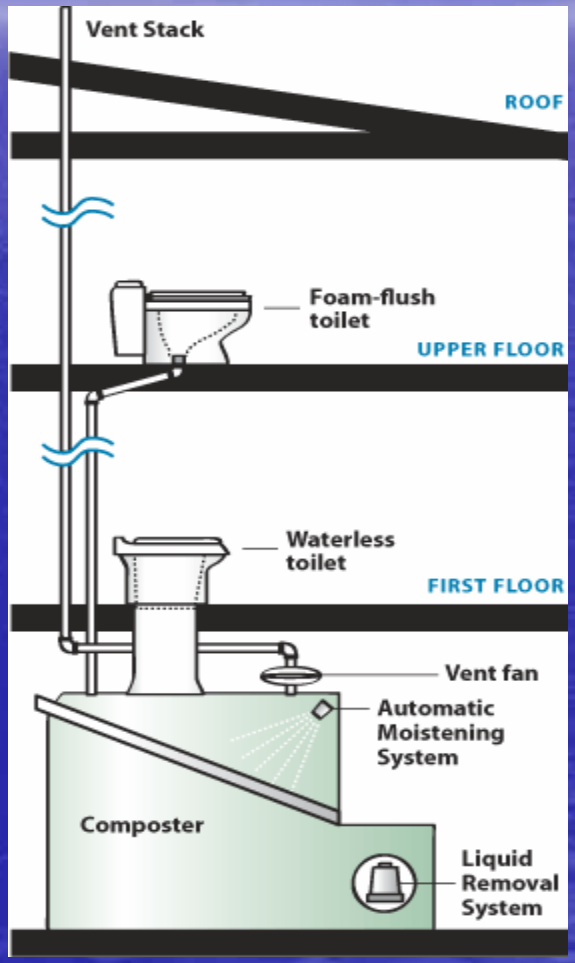
Adsorption

Waterless Urinal

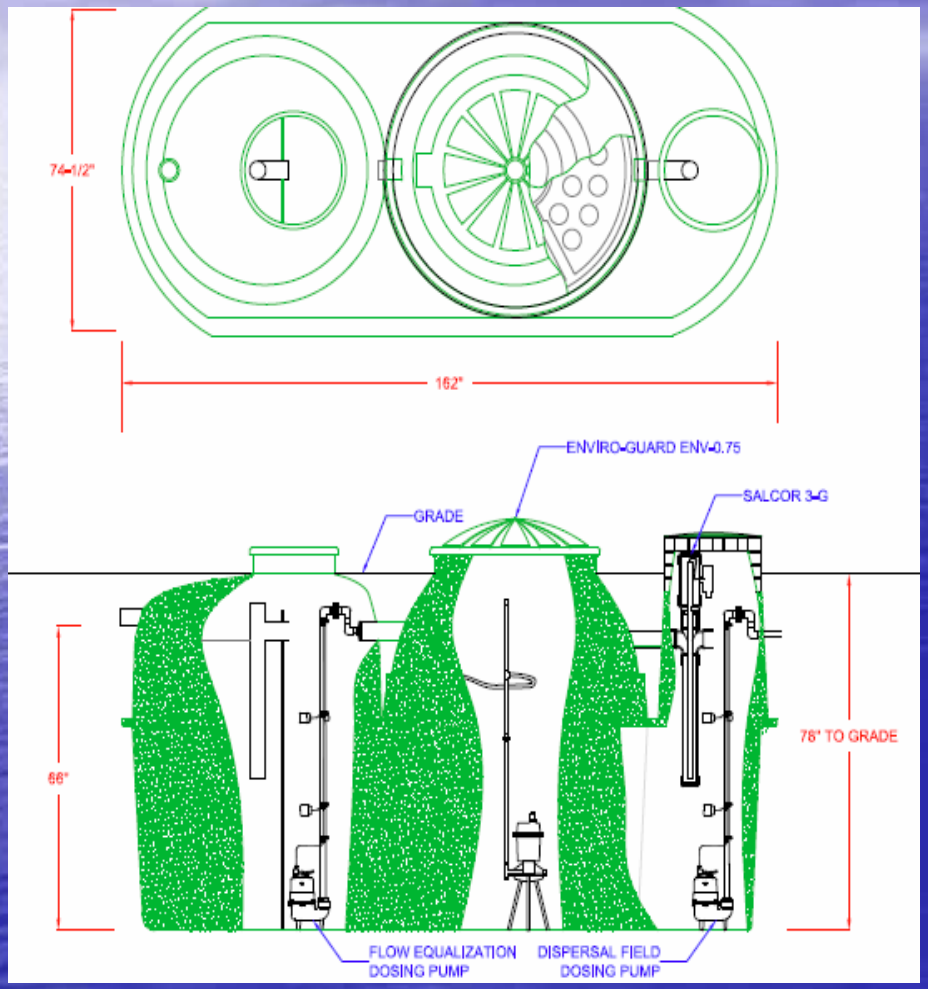
Enhanced toilets

Composting Toilet Configuration

- Clivus Multrum composting toilet systems require an accessible lower space beneath the toilet fixtures. The waterless toilet fixture connects to the composter at an absolute vertical angle, while the foam flush toilet fixture allows for a slope no shallower than 45 degrees.
- A ventilation system continuously pulls air down either fixture, creating an odorless bathroom. An automatic moistening system applies a small amount of fresh water (1-3 gallons per day, typically from a pressurized line) to create ideal composting conditions. An automatic system removes the liquid end-product from the composter and sends it to a storage tank.
- Clivus composters come in a wide range of sizes and are designed for DC as well as AC applications. We can assist you by making all model recommendations and reviewing architectural and engineering plans.



Enhanced septic tank



Effluent Filters

Speed Levelers/ Equalizing Flows

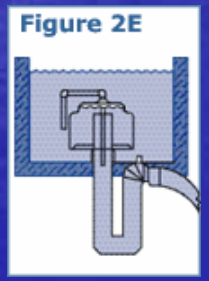
Treatment & Dispersal

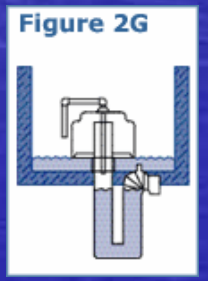
Dosing

- May be required by design or to “lift” wastewater to the Absorption Area
- Delivers a calculated “dose” of wastewater to the Absorption Area (75-85% of pipe volume)
- Allows for rest periods and promotes aerated and unsaturated soil conditions = longer system life
- “Dose” is typically delivered to a D-Box or drop box for gravity feed to the Absorption Area

Pump

Siphon





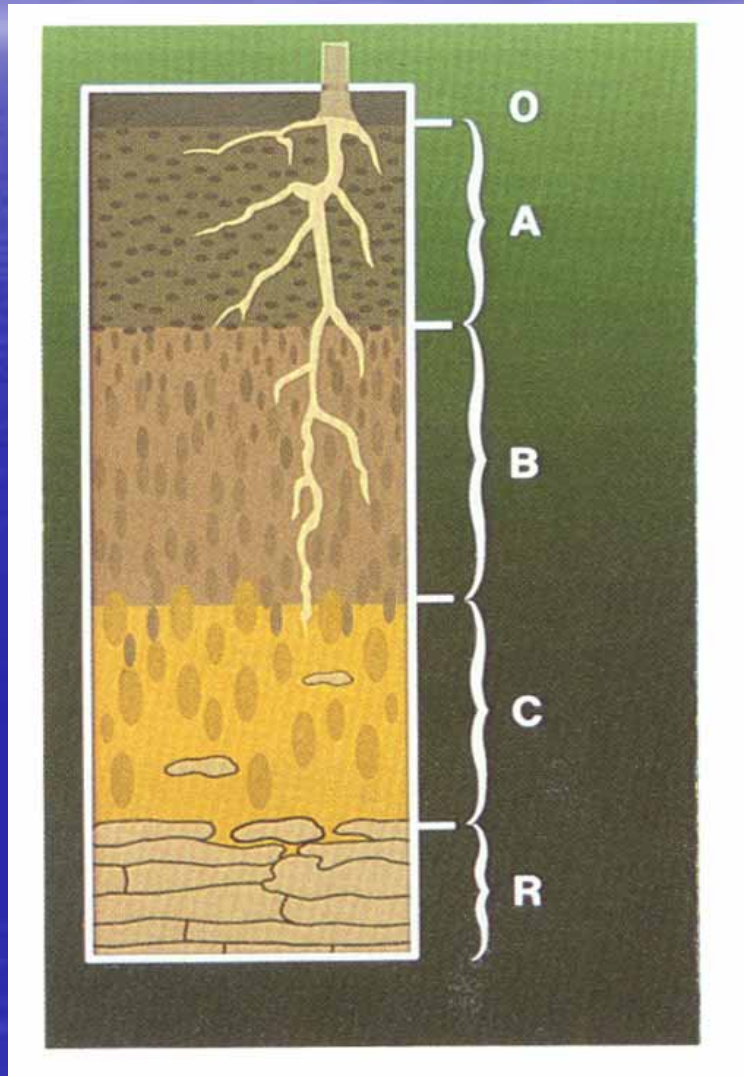
Flout

Problems for Engineering

- Size of Property
- High water table
- Poor drainage of Soils or perk rates
- Steep slopes
- Storm water management

Soil Horizons

- Layers in soil
- Important to observe changes in soil
- Characteristics:
  - Soil Texture
  - Structure
  - Color Change
  - Soil Mottling
  - Seepage



Some sites are tougher sites to figure out

Deep Test Hole

- **Performed or supervised by the LDP**
- **Used to identify soil type and "limiting conditions" (mottling, water, bedrock, clay, or impeding layer)**
- **Determines the <u>TYPE</u> of absorption area appropriate for the site**

Test Hole

Soil Horizons

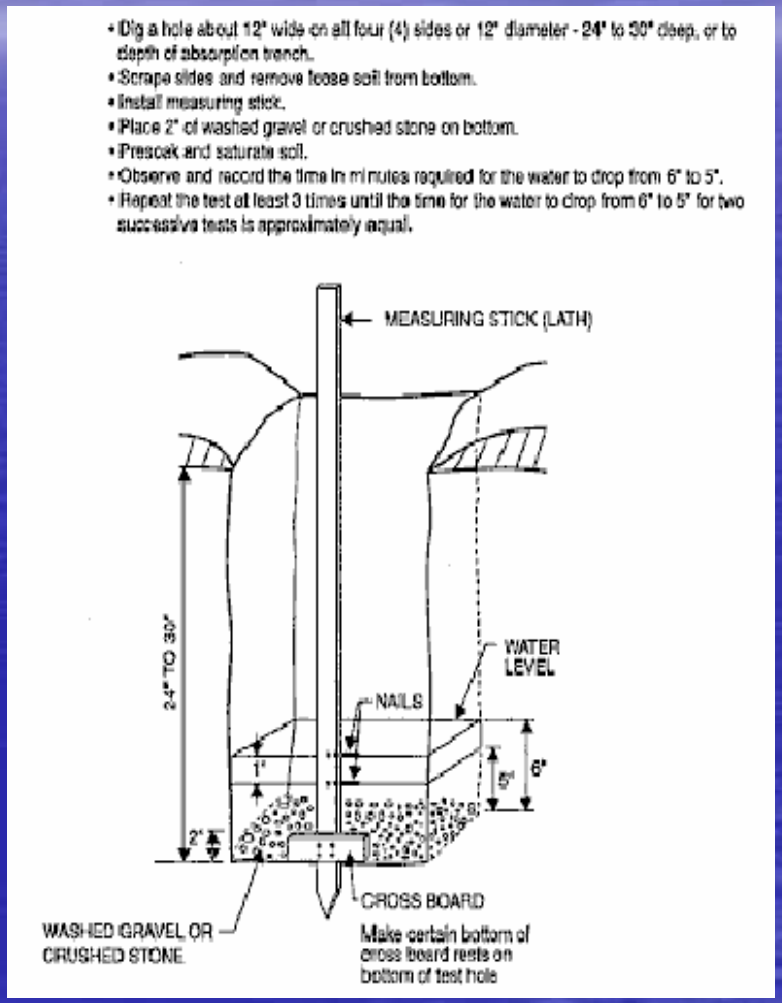
- A--surface layer, heavily influenced by roots
- B--Sub-surface
- C--Parent Material

Soil & Site Appraisal

Mottling is the visible (typically rust colored) “staining” in soils from the oxidation of residual iron as the groundwater table rises and falls during the year. This staining is an indication of the depth of seasonal high groundwater table.

Soil & Site Appraisal

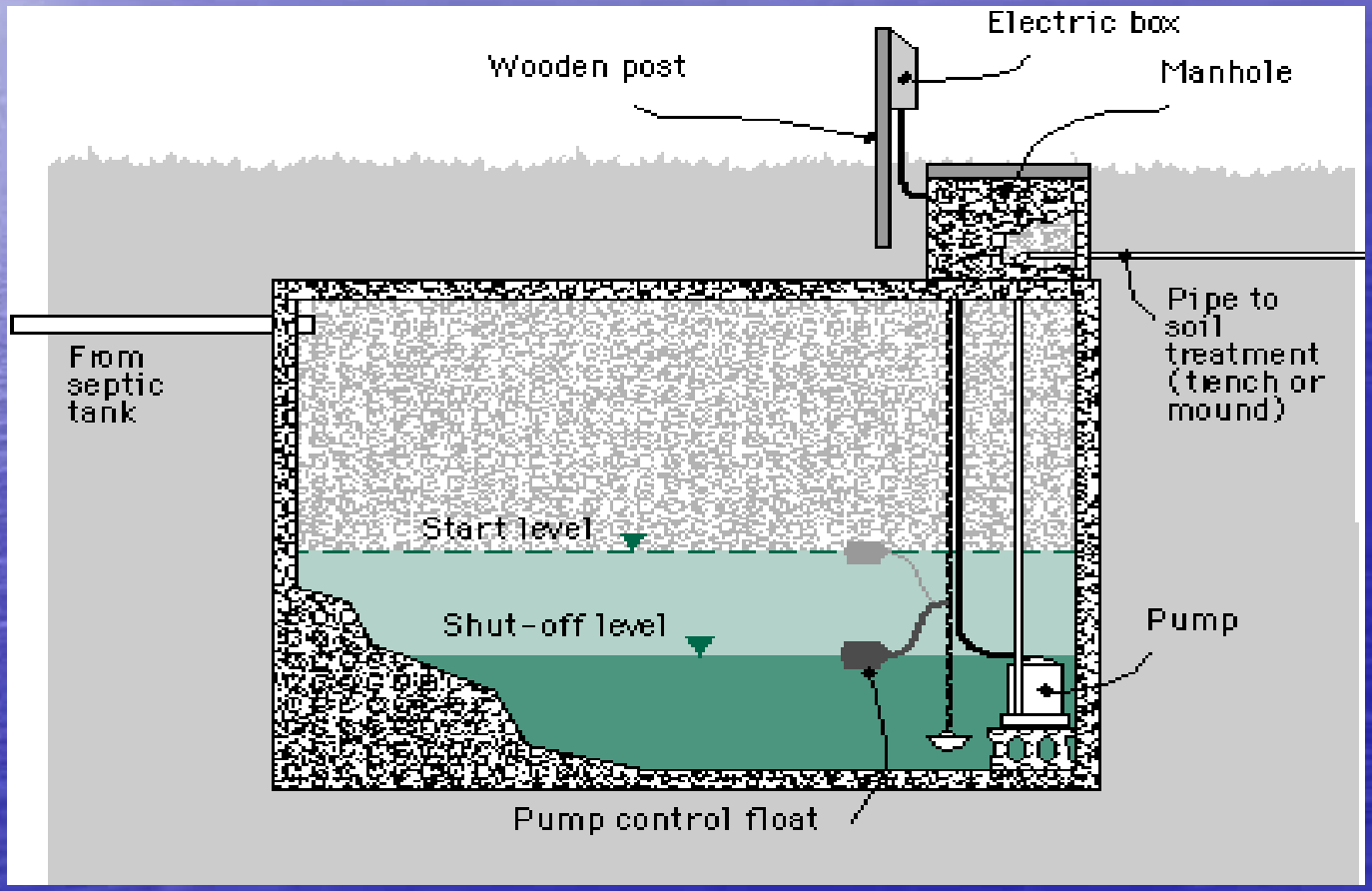
- Percolation Test Performed by the PE or others
- Measure "How Fast" soil will absorb water, measured in minutes per inch (mpi)
- Used to determine the SIZE of the soil absorption area
- "perc" between 1-60mpi
- Too Slow: liquid will not disperse fast enough (untreated water may surface)
- Too Fast: liquid will disperse before treatment can occur (groundwater contamination)



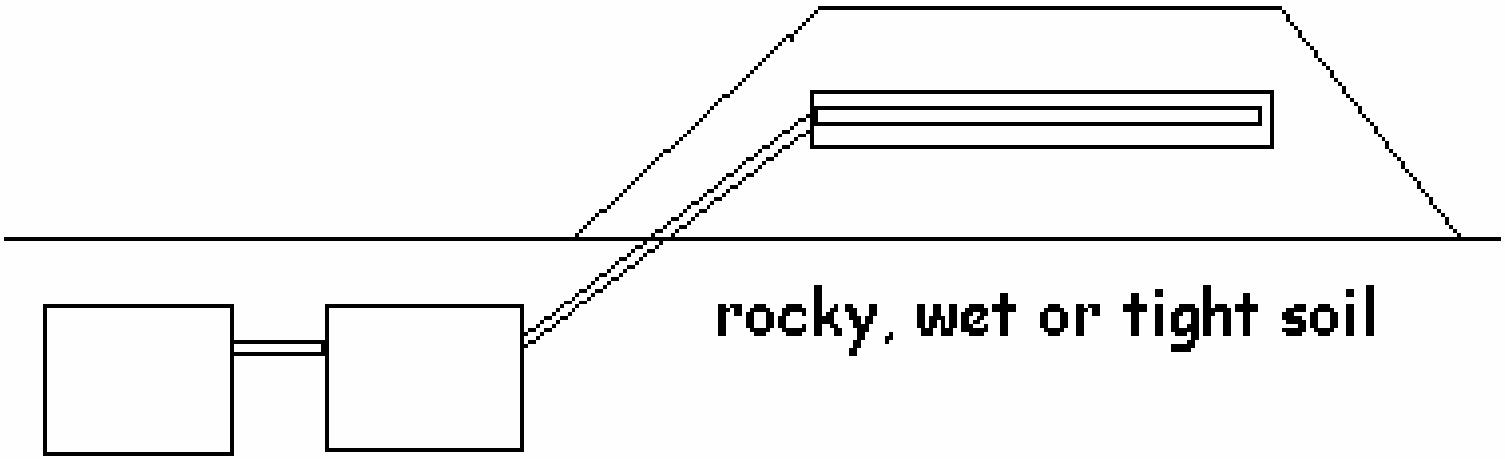
Soil & Safety Precautions

- **CALL BEFORE YOU DIG - Dial 811 Or 800-962-7962**
- **Know the location of water lines, electric, gas and property lines**
- **Contact Public Utilities before digging**
- **Call 2 full working days before start of excavating**

Standard Pump Chamber



Absorption Mound and Why

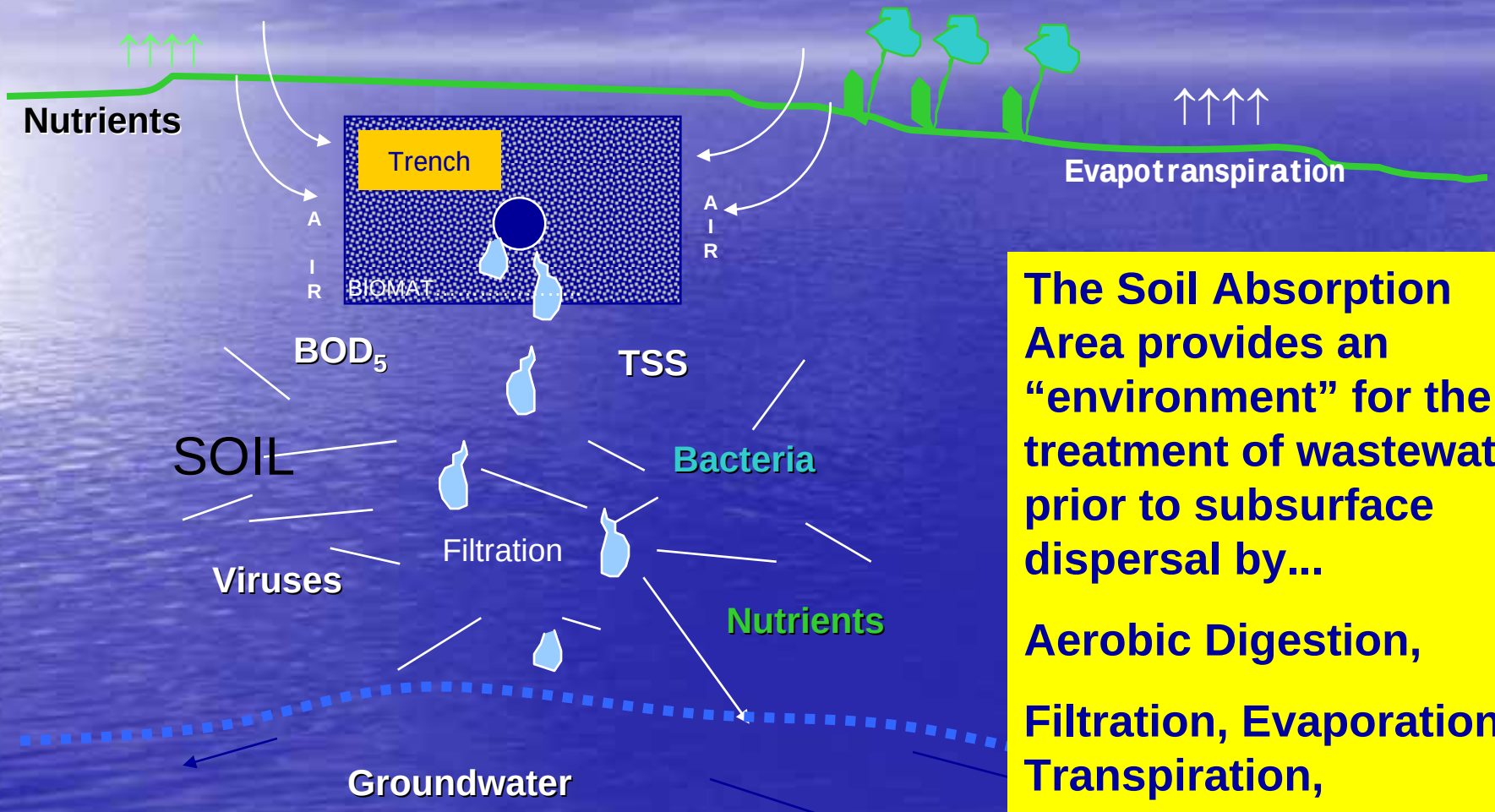


septic tank

pump chamber

Raised drain field, or mound

Treatment & Dispersal



The Soil Absorption Area provides an "environment" for the treatment of wastewater prior to subsurface dispersal by...

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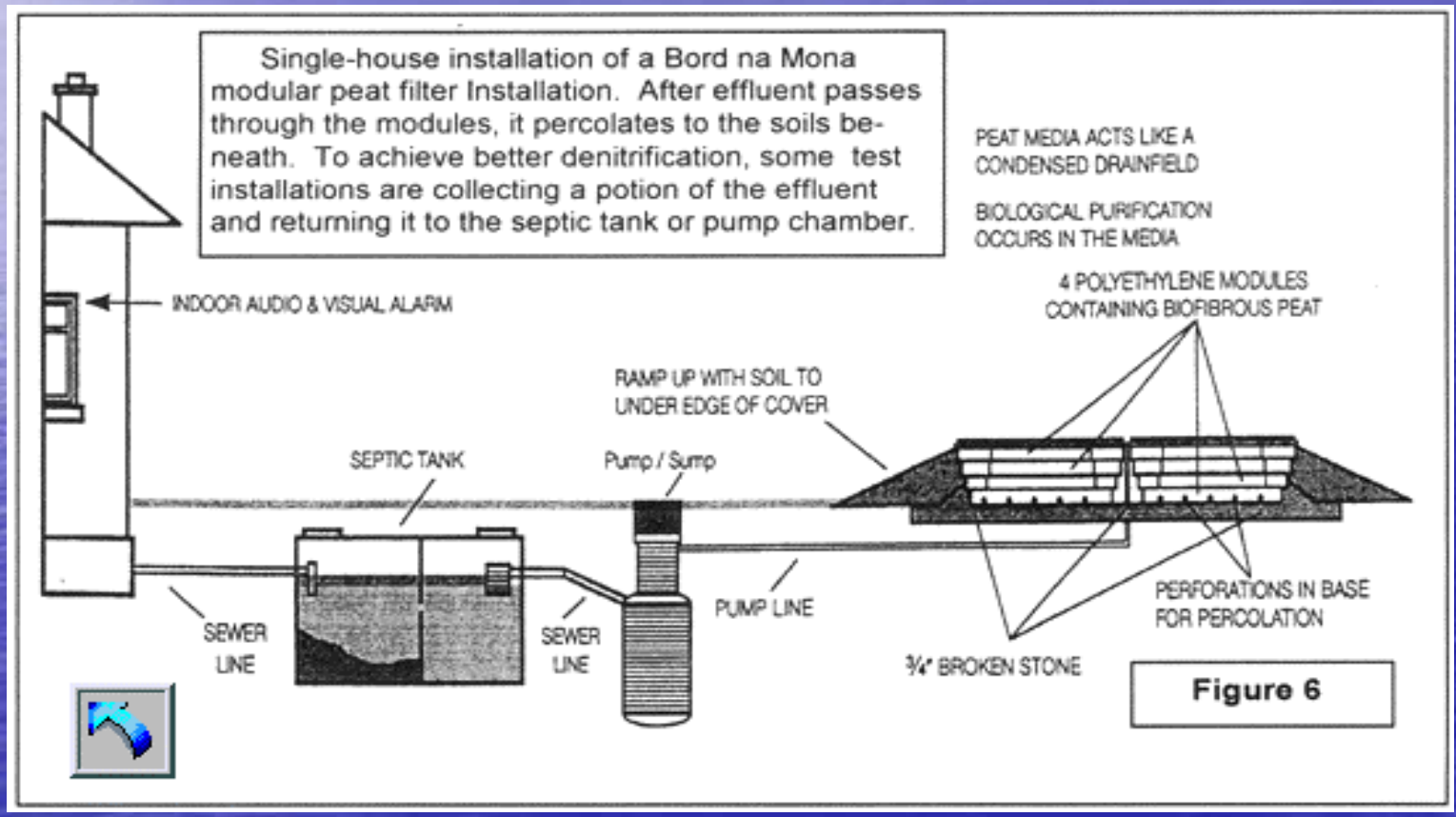
Typical Installation of a Peat system in a mound



Treatment & Dispersal

- Treatment & Dispersal Components

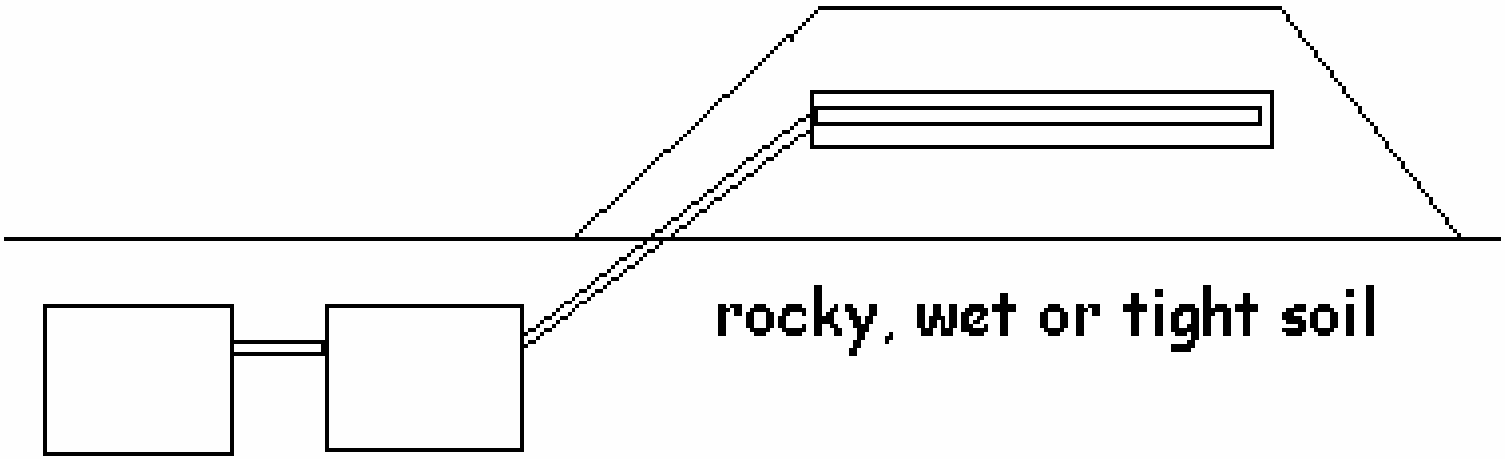





Eljen In-Drain Fields

- Recycled Materials
- Less area needed
- No stone needed

Absorption Mound and Why



septic tank

pump chamber

Raised drain field, or mound

Septic tank and pump chamber

Typical pump installation

Preparation for absorption area

Installation of the Eljen

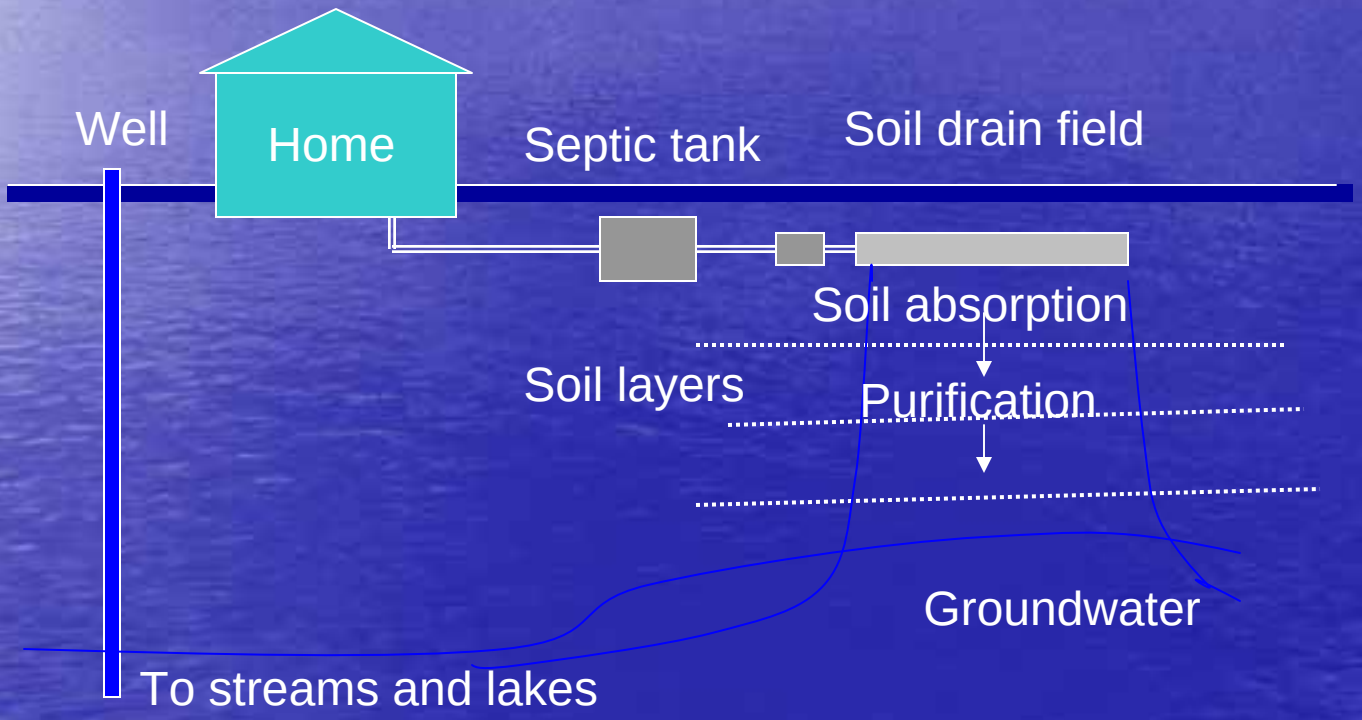
Finished installation of field system

Finished installation of topsoil and seed

Problems For Engineering

Treatment & Water Dispersal in Soil

- The water discharged to the drain field must be able to flow through ground away from the drain area
- Is surface and subsurface storm water away from drain field?



Not So Typical

Steep slope

Small Area

Smaller area

Very small area to work in

Installation of the septic Tank

Confined spaces to work in

Lots of hand work

10 pounds of treatment in a 5 pound area

A true engineering feat accomplished

Some sites have many hurdles to over come and engineer

Installation of an Enviro-Guard and panel

Ways Home Owners can finish things off

Other Technologies

Bottomless sand filters

Gravel less Fields

Alternate Aggregate?

- Tire Derived Aggreagte (TDA) (tire chips)

DISCUSSION

? QUESTIONS ?