

## Take Care of What You Have

*The importance of Operations, Maintenance and Monitoring*



Community Outreach

## *What are the alternatives?*

### What's wrong with the old ways?

Standard Gravity systems are still a good option if all the conditions are right.

However, there are many alternatives to help out when conditions are substandard.

## *Decentralized Treatment is Important Nationally*

- 25% of population served
- 33% of new construction
- Small communities: 11% of need
- > 50% in suburbs or cities



## *Decentralized System*

“An onsite or cluster wastewater treatment system (OWTS) that is used to treat and dispose of relatively small volumes of wastewater, generally from individual or groups of dwellings and businesses”



## *How it all works*



What will your Treatment train look like?

Graphic courtesy of [septicguy.com](http://septicguy.com)

## *A System Owners nightmare*

- Hold and pump



## *A System Owners dream*

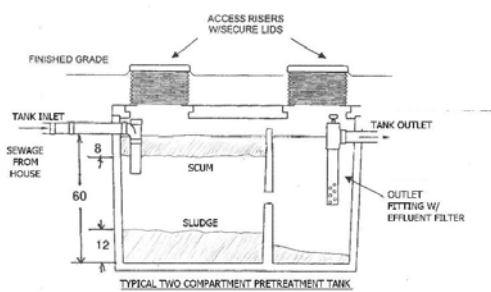
- **Standard Gravity System**



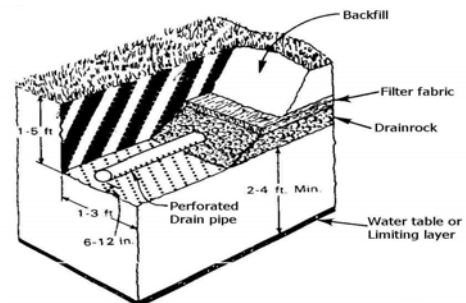
## *The YOUser*

- **Things to be aware of:**
  - The garbage disposal
  - Letting water run unnecessarily
  - Big laundry days
  - Using the toilet for trash
  - Leaky plumbing fixtures
  - Protecting the space of the OWTS

## *Septic tank*



## *Final Treatment & Dispersal Media Filled Trench*



## *Operation, Maintenance & Monitoring Gravity Distribution*

- Water conservation & waste minimization
- Home plumbing repair
- Routine OWTS Inspection, \$100 - \$200
- Pumping when recommended \$300 - \$400

## *Not so lucky...*

- **Site limitations require an alternative**
  - Slow draining soils
  - Fast draining soils
  - High groundwater
  - Proximity to sensitive watersheds
  - Challenging building sites

### ***Percolation rate***

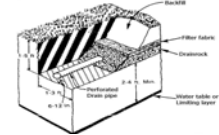
- 1 – 120 mpi, (minutes per inch)

The number of minutes it takes water to drop 1 inch in a test hole. This test is done after the soils have been saturated for 24 hours preceding the test.

### ***Seasonal high groundwater***

- 24 to 36 inches

The determination of the depth of wet season groundwater in relation to the bottom of the dispersal component.

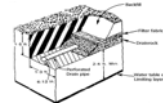


### ***Set backs to waterbodies***

Type of waterbody	Septic tank	Drainfield
Perennial waterway	25ft.	50ft.
Ephemeral waterway	25ft.	35ft.
Intermittent waterway	25ft.	35ft.
Bays, estuaries, ocean	30ft.	75ft.
Drinking water well	100ft.	100ft.

### ***Site size***

- Determining factors for drainfield design,
  - Number of bedrooms and size of home
  - Percolation rate of soils
  - Available area for replacement



### ***Alternatives - Engineered***

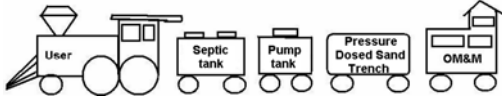
- More Complexity
  - Bottomless Sand & Peat Filters
  - Pressure Dosed Sand Trench
  - Mound System
  - Sand filter with Low Pressure Distribution (LPD)

### ***Alternatives; Proprietary***

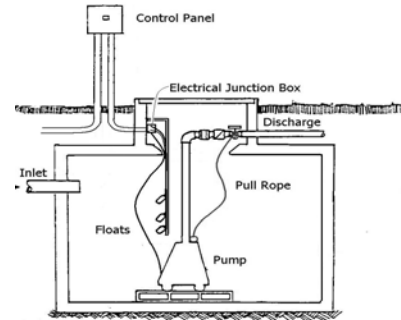
- Even more complexity
  - Recirculating Media Filters
  - Aerobic Treatment Units
  - Ultraviolet Disinfection
  - Subsurface Drip Dispersal

## *An Alternative; Engineered*

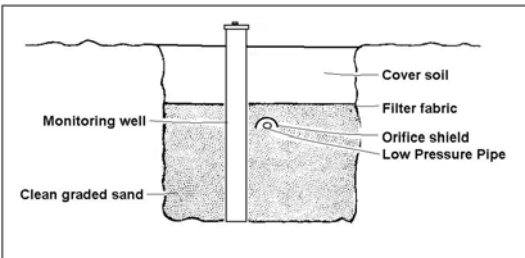
- Pressure Dosed Sand Trench



## *Pump tank*



## *Final Treatment & Dispersal Pressure Dosed Sand Trench*

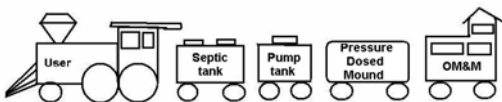


## *Sand Trench OM&M*

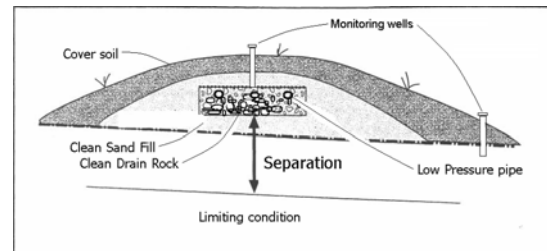
- Inspect Septic Tank
- Collect Control Panel Monitoring data
- Inspect Pump Tank
- Record Trench Inspection Port data
- Inspect and Service LPD
- Prepare and File Report

## *An Alternative Code system*

- Pressure Dosed Mound



## *Final Treatment & Dispersal Pressure Dosed Mound*



### ***Mound OM&M***

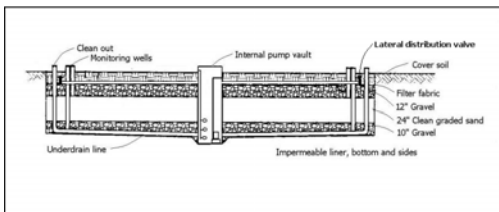
- Inspect Septic Tank
- Collect Control Panel Monitoring data
- Inspect Pump Tank
- Record Mound Inspection Port data
- Inspect and Service Mound
- Prepare and File Report

### ***Supplemental Treatment***

- Intermittent Sand Filter
- Pressure Dosed Trenches



### ***Advanced Treatment Intermittent Sand Filter***



### ***Sand Filter LPD OM&M***

- Inspect Septic Tank
- Collect Control Panel Monitoring data
- Inspect Pump Tank
- Record Sand Filter Inspection Port data
- Inspect and Service Pressure Dosed Laterals
- Inspect and Service Internal Pump Vault
- Record LPD Inspection Port data
- Inspect and Service LPD Laterals
- Prepare and File Report

### ***All the Bells and Whistles***

- Advanced Treatment Unit
- Disinfection
- Drip Dispersal



### ***Supplemental Treatment units***

- Media Filters
  - Single Pass
    - ISF
    - Peat
    - Foam
  - Recirculating
    - Gravel
    - Textile

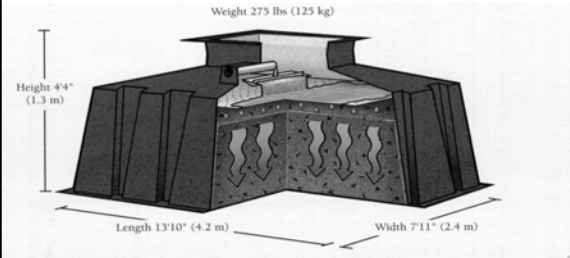


## Supplemental Treatment units

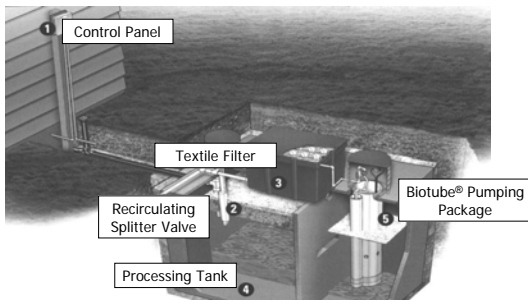
- Aerobic Treatment Units - ATU
  - Attached growth
  - Suspended growth



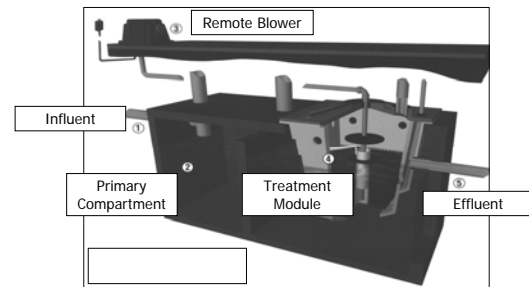
## Supplemental Treatment Units Modular Peat Filter



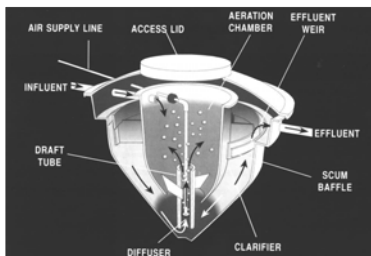
## Supplemental Treatment Units Recirculating Textile Filter



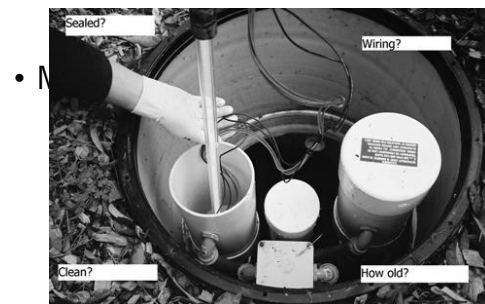
## Supplemental Treatment Units ATU – Attached Growth



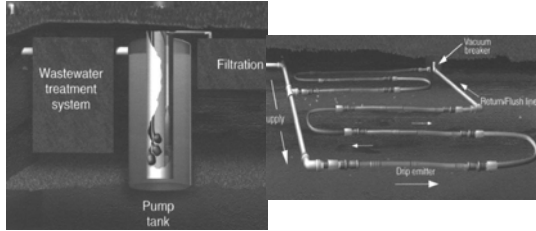
## Supplemental Treatment Units ATU – Suspended Growth



## Disinfection Ultraviolet light



## ***Final Treatment & Dispersal Drip Dispersal***



## ***OM&M is Key to System Life***

- **Standard Gravity**
  - User habits
  - Routine Inspections
  - Pump and clean as needed
- **Take Care of What you have**

## ***OM&M is Key to System Life***

- Each proprietary technology has it's own checklist of service requirements
- Not dissimilar to municipal wastewater treatment facilities
- Is your OM&M Service Provider trained and certified?

**Take Care of What you have**

Questions?