

# What is an Onsite Wastewater Treatment System Malfunction

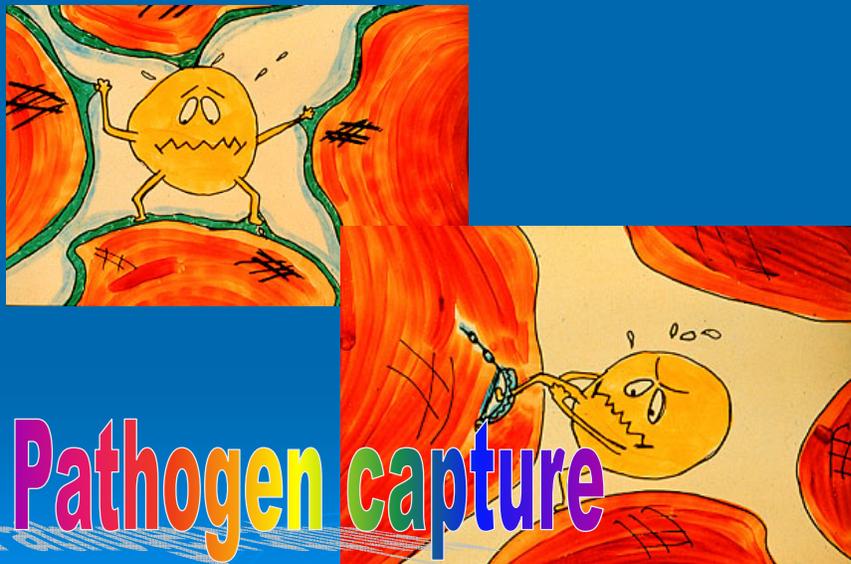
Bruce Lesikar  
Texas AgriLife Extension Service

## Overview

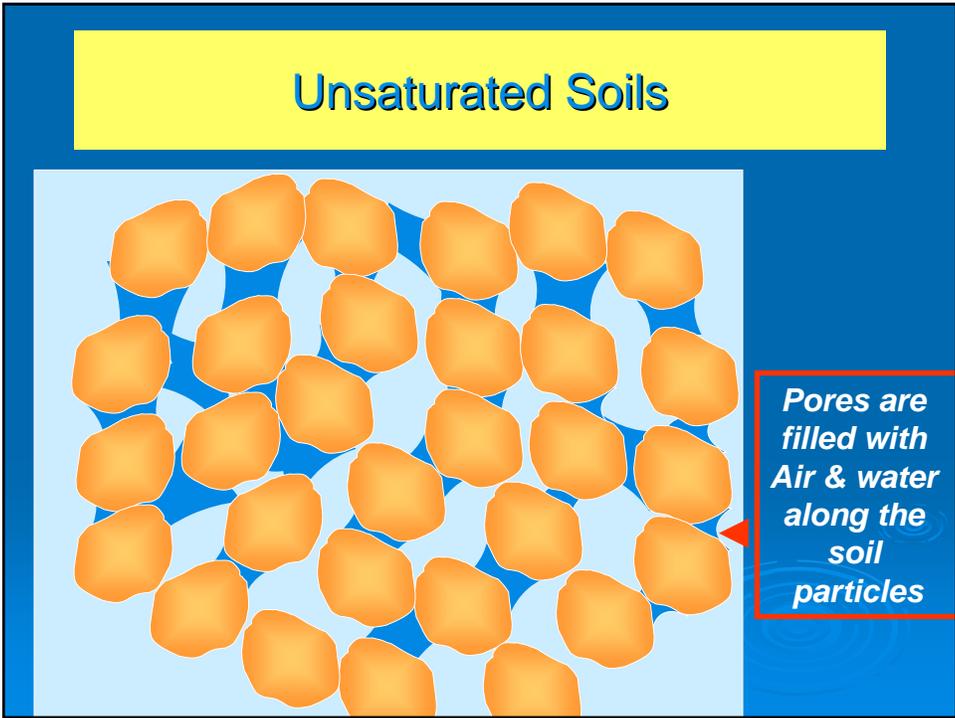
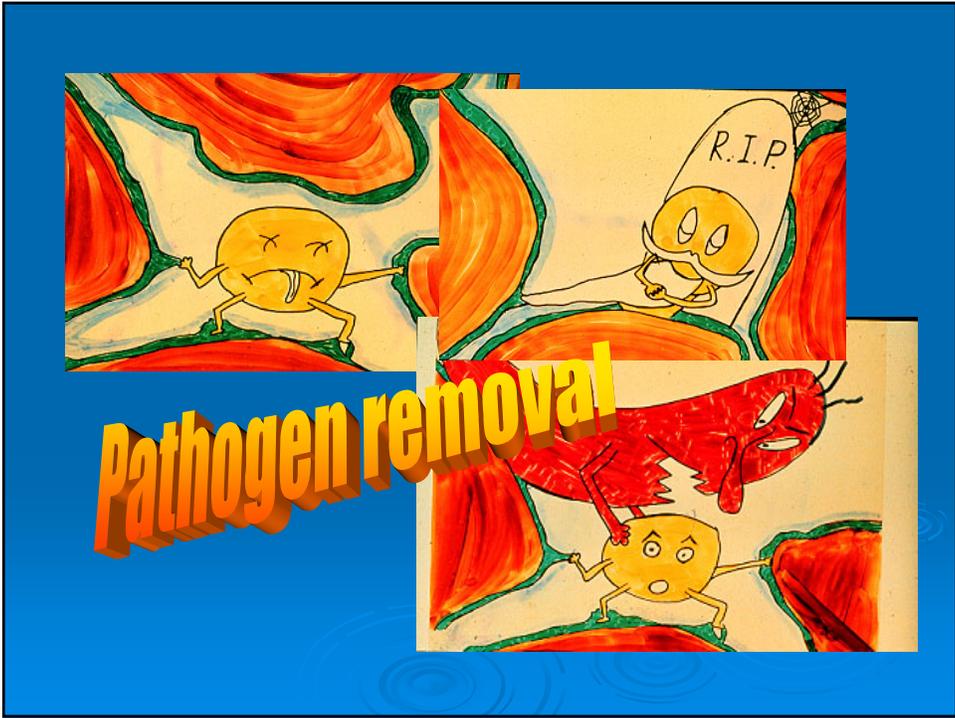
- Contaminants
- Malfunction
- Signs for evaluating potential pathways
  
- Note: Pictures in this presentation are from watersheds outside Lake Granbury

# Pathogens

- Treatment
- Absorption
- Filtered
- Killed Off



Pathogen capture



## Key Points for Pathogen Removal

- Oxygen
  - Aerobic conditions
- Time
  - Pathogen capture
  - Predation
- Unsaturated flow
  - Groundwater separation
  - Surface flow

## What is a Malfunction?

- Hard malfunction
  - Public health
  - Environmental health
- Soft malfunction
  - Component
  - Part
  - Device
  - May not affect treatment



## What are the indicators?

- Signs leading to a risk for pathogen transport
  - Groundwater separation
  - Surface water contamination



## Groundwater

- Separation to groundwater
  - Groundwater mounding
  - Saturation to the surface



## Discharge Pipes

- Direct to surface of ground
- Transport during wet conditions
- Distance water travels
- Source
  - Overflowing field
  - Graywater



## Green Trail

- Green strip
- Additional nutrients
- Trail leading to waterway
- Distance trail travels



## Water Loving Vegetation

- Wet conditions on the ground
- Vegetation changes with the type of materials



## Surface Application

- Disinfection critical step in treatment train
  - Homeowner generally responsible
- Water tightness of components is critical
  - Washing out
  - Groundwater/surface water during rainfall



## Summary

- Removing Pathogens
- Contaminants
- Malfunction
- Signs for evaluating potential pathways