

# **Drip Dispersal following Pretreatment**



- Overcoming FEAR
- Quality Control
- Widespread Use
- Environmental Benefits/Design
- Future

# Initial Concerns



- Small Orifice Size
  - 1000 Sq Ft. System
  - 500 linear ft
  - 0.3 Sq Inch Orifice Size
- TOTAL!!!

# Initial Concerns



- System Design
  - Gravity Flow from Pre-treatment
  - Manual Filter Cleaning
  - Clogged Filter means Catastrophic Failure

# Learning



# Learning



# Learning



# Learning



# Larger Systems and Widespread Use



# Larger Systems and Widespread Use



# Design Example



- 960 GPD System
- 0.2 LTAR for Conventional
- 0.2 LTAR for Drip With Pre-treatment
- 4800 Sq Ft
- 2400 Linear Ft Drip

# Environmental Footprint



- Effluent Quality following pretreatment
  - BOD – 10 mg/l
  - TSS – 10 mg/l
  - Nitrogen – 20 mg/l
- Nitrogen Uptake In Typical NC Turf (Hybrid Bermuda - NCSU)
  - >60%

# So What Have We Done?



1. Pre-Treat Wastewater to Reuse or Near Reuse Standards
2. Pressure Dose with Drip
3. Time Dose
4. Put effluent in the biologically active layer of soil
5. Required Management

# Where are we going?



- More Integrated Products
- Larger Systems
  - “Decentralized”
- One Permitting Agency
- Irrigation Allowances

# Questions?

