**WATER QUALITY AS A CAREER**

* Introduction
  + Maryland Environmental Service
  + Water and Wastewater Treatment in Central MD
  + Licensed by MD Department of the Environment (MDE)
* Mission
  + Provide clean drinking water to clients
  + Treat wastewater
  + Discharge a clean product at a controllable point source to reduce Chesapeake Bay pollution
* Water Treatment
  + PH adjustment with Chemical addition
    - Sodium Hydroxide (Caustic Soda)
  + Disinfection
    - Sodium Hypochlorite (Chlorine)
    - UV Light
  + Monitored Nutrient Contaminants
    - Nitrates
    - Bacteria (Total Coliform, Fecal Coliform, E.Coli)
    - Heavy Metals (Lead and Copper)
* Wastewater Treatment
  + Activated Sludge Process
  + Treatment Stages
    - Raw Influent
      * pH Stabilization and grit removal
    - Mix
      * Denitrification
    - Aeration
      * Renitrification and Ammonia Removal
    - Clarification
      * Separation of solids from clear water
    - Disinfection
      * UV Light
      * Chlorination then dechlorination before discharge
    - Treated Effluent
      * Stream Discharge
      * Ground Discharge
  + Monitored Nutrient Contaminants and Parameters
    - pH
    - Dissolved Oxygen
    - Nitrates
    - Ammonia
    - Biochemical Oxygen Demand
    - Total Suspended Solids
    - Phosphorous
    - Bacteria
* Microscope Activity
  + Locate and Identify Microorganisms used in Wastewater Treatment
    - Ciliates
      * Stalked
      * Free Swimming
    - Rotifers
    - Flagellates
* Discussion