Performance Dynamics of Trace Organic Contaminants in Onsite Treatment Units and Systems

Funding Agency:
Water Environment Research Federation
DEC14U06

Principal Investigators:

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Project Objectives

- Characterize dissolved organic carbon and trace organic contaminant concentrations in above ground onsite wastewater treatment unit effluent.
- Assess the role of loading rates on the ability of a soil infiltration systems to effectively remove trace organic contaminants.
- Identify the role of feed water quality including DOC character on the removal of trace organic contaminants using septic tank effluent and membrane bioreactor reactor effluent water in soil column studies with drip dispersion loading rates.

Methodology

- Analytical
  - Dissolved Organic Carbon Characterization
    - 3D Fluorescence
    - Size Exclusion Chromatography with UV and DOC detection.
  - Trace Organic Contaminant quantification
    - Gas Chromatography Mass Spectrometer
- Experimental
  - 8 Soil columns
    - 2 operating with Septic tank effluent at low loading rate
    - 2 operating with Septic tank effluent at high loading rate
    - 2 operating with membrane bioreactor effluent at low loading rate
    - 2 operating with membrane bioreactor effluent at high loading rate