

University Curriculum Development for Decentralized Wastewater Management

Wastewater Characterization

Suggested Use of Material

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Citation of Materials

The educational materials included in this module should be cited as follows:

Gross, M.A. 2005. Wastewater Characterization Text. *in* (M.A. Gross and N.E. Deal, eds.) University Curriculum Development for Decentralized Wastewater Management. National Decentralized Water Resources Capacity Development Project. University of Arkansas, Fayetteville, AR.

Gross, M.A. 2005. Wastewater Characterization - PowerPoint Presentation. *in* (Gross, M.A. and N.E. Deal, (eds.) University Curriculum Development for Decentralized Wastewater Management. National Decentralized Water Resources Capacity Development Project. University of Arkansas, Fayetteville, AR.

Wastewater Characterization

Suggested Use of this Material

This chapter is designed to be used in conjunction with the rest of the materials included in the University Curriculum Development project. It serves as an introduction to other chapters by providing general information on wastewater sources. The instructor may choose to assign the text as supplemental reading or present the PowerPoint during one class period at or near the beginning of a semester course. An outline of the materials follows here.

- I. Importance of wastewater characterization
 - A. Effluent quality depends upon influent characteristics
 - B. Effect on design of systems

- II. Treatment efficiency and capacity reactions

- III. Wastewater sources
 - A. Residential
 - B. Municipal
 - C. Commercial
 - D. Industrial
 - E. Agricultural

- IV. Domestic wastewater characteristics through the treatment train
 - A. Raw
 - B. Septic tank
 - C. Soil absorption system

- V. Non-domestic sources
 - A. Sources and components of concern
 - B. Treatability of specific components
 1. Reaction rates
 2. Oxygen demand
 - C. Special concerns about grease
 1. Wastewater temperature
 2. Grease trap effectiveness
 - a. Sizing criteria
 - b. "Modern" oils
 - c. Effect of detergents
 - d. Effect of additives

- VI. Determination of wastewater characteristics
 - A. Existing data
 - B. Waste stream sampling
 1. BOD, TSS, pH, coliform, N and other nutrients

2. Toxic components
3. "Treatability"

VII. The concept of Load

A. Variation in flows

1. Daily
2. Hourly

B. Domestic

C. Non-domestic