

Course Title: Operation of Wastewater Treatment Plants, Volume 2, Eighth Edition, Part B, “Solids Management and Plant Maintenance” (OWTP2—B)

Course Hours: 40.4 hours, 4.0 CEUs

Course Description:

This course is designed to train operators in the practical aspects of operating and maintaining wastewater treatment plants, emphasizing safe practices and procedures using selected chapters from the training manual, *Operation of Wastewater Treatment Plants, Volume 2*. Information is presented on solids handling and disposal; sludge processing, thickening, stabilization, and dewatering; and methods used to maintain equipment and facilities in wastewater treatment systems, including general treatment plant maintenance, electrical systems, motors, pumps, and pneumatic systems.

Course Objectives:

- Understand sludge types, characteristics, processing needs, and pumping processes, and the regulatory framework through which these materials can be treated and disposed of.
- Explain the startup, operation, shutdown, and maintenance requirements for sludge treatment processes. Develop operating procedures and strategies for all operating conditions, including process performance troubleshooting.
- Identify potential safety hazards and conduct operation and maintenance duties using safe procedures.
- Describe the solids or biosolids disposal options and how each option is performed within federal, state, and local regulations and guidelines.
- Understand the terms, nature of, and safety procedures for electricity.
- Properly select and use meters.
- Discuss the types of and maintenance for different motor and pump varieties.
- Develop and conduct an effective maintenance program.

Course Outline:

1. Residual Solids Management (26 hours)
 - 1.1 Solids Handling and Disposal
 - 1.2 Preliminary Sludge Processing
 - 1.3 Sludge Thickening
 - 1.4 Sludge Stabilization
 - 1.5 Dewatering and Volume Reduction
 - 1.6 Solids Disposal
2. Plant Maintenance (14.4 hours)
 - 2.1 Wastewater Treatment System Maintenance
 - 2.2 Electricity
 - 2.3 Motors
 - 2.4 Pumps
 - 2.5 Pneumatic System Maintenance
 - 2.6 Unplugging Pipes, Pumps, and Valves

Course Format:

This course is a self-paced correspondence course. The training manual used for this course contains text, tables, graphs, illustrations, math example problems, section questions, and chapter review questions to present information and offer self-assessment. Each chapter is arranged for students to read a section and then answer the “Check Your Understanding” questions that follow that section to assess their knowledge of the content of each section. A chapter review is provided at the end of each chapter to review the important points covered in the material. Students can check their answers using the Answer Key at the back of the book.

Assessment Methodology:

The course format uses chapter exams with best answer questions to assess each student’s mastery of the course material.

Textbook:

Office of Water Programs (2022). *Operation of Wastewater Treatment Plants*, Volume 2, Eighth Edition. Sacramento, CA: Office of Water Programs/University Enterprises, Inc.