Treatment System Analysis Webinar Description

Water and wastewater treatment systems are complex, interconnected processes where changes in one area often impact performance elsewhere. When new treatment requirements are introduced—such as tighter permit limits or emerging contaminants like PFAS—solutions are frequently implemented in isolation, leading to unintended consequences, inefficiencies, and ongoing operational challenges.

This course presents a systems-based approach to treatment analysis, focusing on how to evaluate and optimize the entire process rather than individual components. Participants will learn how to assess treatment performance holistically, identify interactions between unit processes, and understand how factors such as solids handling, hydraulics, and seasonal variability influence overall system behavior.

The course examines modern treatment challenges, including PFAS, microplastics, pharmaceuticals, and pesticides, with emphasis on how conventional processes—coagulation, clarification, filtration, adsorption, and oxidation—can be integrated and optimized to address these contaminants effectively.

Participants will also learn how to use data as a decision-making tool, including techniques for data validation, trend analysis, and performance evaluation. The role of pilot testing and stepwise process changes is emphasized to reduce risk and improve outcomes.

Drawing on real-world case studies, this course demonstrates how a comprehensive system analysis can reveal opportunities to improve performance without unnecessary capital upgrades. Attendees will leave with practical strategies to evaluate their own systems, implement changes more effectively, and troubleshoot complex treatment challenges with greater confidence.