BEST PRACTICE IN SEWAGE & INDUSTRIAL WASTE WATER TREATMENT & ENVIRONMENTAL PROTECTION

TRAINIT ACADEMY

WWTE100
Water and Wastewater Treatment Engineering

COURSE TITLE

BEST PRACTICE IN SEWAGE & INDUSTRIAL WASTE WATER TREATMENT & ENVIRONMENTAL PROTECTION

COURSE DATE/ Venue

20 – 24 September 2021

London, UK

COURSE REFERENCE

WWTE100

COURSE DURATION

05 Days

DISCIPLINE

Water and Wastewater Treatment Engineering

COURSE INTRODUCTION

The quality of groundwater used cannot be compromised any longer and the servicing requirements of on-site sewage disposal systems cannot be ignored. With limited funds available to you - the private owner or regulatory agency that has responsibility for inspection, the task of on-site sewage treatment and disposal is becoming very difficult.

Industrial wastewater dischargers face a variety of enforcement actions if they are not in compliance with the USA Clean Water Act. This is the case if the discharger is a direct industrial discharger, or is an indirect discharger into a Publicly Owned Treatment Works (POTW). This course covers the regulations that affect the management of industrial wastewater permitting, effluent guidelines, and associated issues.

COURSE OBJECTIVE

This course will cover all aspects of sewage and industrial waste treatment process. It will cover planning, design, construction, operations and maintenance of the modern sewage and effluent treatment plants. Further, this course will cover all aspects of Environmental Protection in Industrial Plants.

With limited funds available to the owners we believe this course will help you to install an effective system. You will learn numerous tips and tricks throughout the course to make it very practical and relevant to your applications.

COURSE AUDIENCE

- Environmental managers, engineers and environmental professionals
- Operations, maintenance, inspection and project managers, supervisors and engineers
- Plant, Mechanical, Maintenance and Design engineers, technicians and staff
- Municipal planners & engineers
- Laboratory Staff
- Anyone responsible for managing and operating sewage treatment facilities
- Anyone involved with making decisions about the discharge of any industrial pollutants into water should attend this course. The course provides the tools needed to determine compliance with the requirements of their job. The course is designed for industrial wastewater compliance managers and supervisors

COURSE CONTENT

DAY 1

Welcome, Introduction, Workshop Preview, Learning Outcomes and the Assessment Method

Wastewater Sampling and Testing

- Selected parameters in wastewater treatment
- pH, DO, T
- Suspended solids
- Fat, oil and grease (FOG)
- Biochemical oxygen demand (BOD), and chemical oxygen demand (COD)
- Total Kjeldahl Nitrogen (TKN) and ammonia
- Total phosphorous
- Nitrate and nitrite

- Residual chlorine
- Sampling and testing for small plants

Industrial Wastewater Treatment - Pre-treatment and Primary Treatment

- Microbiology fundamentals in wastewater treatment
- Pre-treatment: equalization flow, pH
- Primary treatment: solids removal

Industrial Wastewater Treatment - Secondary Treatment

- Bioreactors
- Aeration concepts and types of aerators
- Types of treatment processes: activated sludge treatment, rotating biological contactors and trickling filters, fluidized bed bioreactors
- Rudimentary technologies: septic tanks and lagoons/stabilization ponds

Adjournment

DAY 2

Industrial Wastewater Treatment - Tertiary Treatment

- Biological nutrient removal
- Nitrogen removal
- Phosphorus removal: chemical phosphorous removal, coagulation and flocculation concepts, biological phosphorous removal
- Filtration fundamentals
- Membranes
- Disinfection fundamentals

Advanced Wastewater Treatment - Reverse Osmosis (RO)

- Applications of membrane technologies
- RO principles
- RO applications

Advanced Wastewater Treatment - Ion Exchange

- Ion exchange principles
- Ion exchange applications

- Ion exchange issues

Advanced Wastewater Treatment – Advanced Oxidation

- The case of pharmaceuticals and endocrine disruptors in wastewater

Adjournment

DAY 3

Advanced Wastewater Treatment – Disinfection Processes

- Chlorination
- Ozonation
- Membranes as pathogen removers
- Ultraviolet and peroxide/ultraviolet processing

Sludge Treatment

- Aerobic treatment (ATAD processes)
- Anaerobic digestion

Characteristics of Effluents

- Chlorine/ammonia discharge requirements

Discharge into Receiving Systems

- Potential impacts of effluent discharge into receiving water bodies

Infraguide Best Practices

Adjournment

DAY 4

Practical Exercises Related to Centralized and Decentralized Wastewater Treatment Plants

- Conventional wastewater treatment
- Advanced wastewater treatment

DAY 5

Environmental Management of Industrial Waste Water Treatment

- Introduction to ISO 14001 (Environmental Management System) and what it can and cannot do

- The elements of ISO 14001 and its relationship with ISO 9001 (Quality Management System)
- Some typical Hazardous Waste Regulations and the need for harmonization
- Life Cycle Management of Industrial Waste Water treatment
- The importance of documentation in Waste Water treatment

COURSE CERTIFICATE

TRAINIT ACADEMY will award an internationally recognized certificate(s) for each delegate on completion of training.

COURSE FEES

$6,150 per Delegate. This rate includes participant's manual, Hand-Outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

COURSE METHODOLOGY

The training course will be highly participatory and the course leader will present, guide and facilitate learning, using a range of methods including formal presentation, discussions, sector-specific case studies and exercises. Above all, the course leader will make extensive use of real-life case examples in which he has been personally involved. You will also be encouraged to raise your own questions and to share in the development of the right answers using your own analysis and experiences. Tests of multiple-choice type will be made available on daily basis to examine the effectiveness of delivering the course.

- 30% Lectures
- 30% Workshops and work presentation
- 20% Case studies & Practical Exercises
- 10% Role Play
- 10% Videos, Software or Simulators (as applicable) & General Discussions