



MAESTRO
CONSULTANTS

OPERATIONS OF WATER TREATMENT AND TROUBLESHOOTING PROCESS UPSETS

COURSE OUTLINE 2024

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TRAINING TITLE

OPERATIONS OF WATER TREATMENT AND TROUBLESHOOTING PROCESS UPSETS

VENUE

UAE, DUBAI

DURATION

5 Days

DATES

28 October – 01 November 2024

PRICE

\$5,250 per attendee including training material/handouts, morning/afternoon coffee breaks, and Lunch.

TRAINING INTRODUCTION

Billions of gallons of wastewater containing oils and particulates are produced yearly by metallurgical plants, ships, petroleum and gas operations, industrial washing operations, and other processes. Traditional technologies, such as gravity separators, air or gas flotation, chemical flocculation, plate coalesces, and hydro clones, are generally able to produce effluents containing as little as 30 ppm of dispersed oil and particulates. However, these treatment technologies perform poorly on chemically stabilized suspensions and emulsions, very small particles and droplets (G-10 um in diameter), and soluble components. Moreover, effluents with less than 10 ppm impurities are desired, because of the potential toxic effects of the contaminants and their tendency to foul reverse-osmosis membranes and downstream processing equipment.

Microfiltration and ultrafiltration membranes can remove particulates, microorganisms, and oils from water if the membrane material and pore sizes are chosen appr/privately. However, they are subject to fouling, which often reduces the permeate flux (volume of water passing through the membrane per surface area per time) below acceptable levels.

Water systems have long tended to be one of the neglected areas of the process plant. However, this situation is changing rapidly as environmental legislation tightens. This course is uniquely placed to assist process plants in meeting these challenges,

offering unrivaled expertise in water systems and the problems associated with oily water treatment. Much of the technology discussed in this course has been developed to meet the challenges faced in the North Sea; oil producers face some of the toughest environmental controls in the oil industry.

This course will cover all stages of oily water treatment from receiving waste oil and oily water to delivering clean water that meets environmentally safe standards.

TRAINING OBJECTIVES

By the end of this course, participants will be able to:

- Apply the latest techniques and technologies in oily water treatment
- Discuss the sources of oily water in oil production fields, refining, and steam cracking and explain the environmental imperative standards & legislations about the discharge of oily water
- Describe the layout of treatments, stages of general effluent treatment, the pretreatment of sour condensates, principles of preliminary oil separation, and the physicochemical purification of effluents from preliminary oil separators
- Monitor purification plants such as measurement of hydrocarbons and organic matter, pH meters, and performance of WTP equipment
- Discuss new technology such as membrane biological reactors (MBR), rotating biological contractors (RBC), sequence batch reactors (SBR) as well as sludge pumping and flowmeters for mass balances

TRAINING AUDIENCE

This course is intended for environmental and HSE professionals and engineers, oily water treatment staff, design engineers and sewage operators, municipal planners and engineers, plant and maintenance engineers, mechanical engineers, technicians, and staff. Further, this course is suitable for process engineers, operation, maintenance, inspection, production managers, supervisors, foremen, and anyone responsible for managing and operating wastewater treatment facilities.

TRAINING OUTLINE

Day 1. Introduction

Nature of the Pollution

- a. Mineral Pollution
- b. Organic Pollution

Day 2. Main Sources of Pollution

- a. At the Production
- b. During Transportation
- c. During Refining

Day 3. General Pollution Criteria

- a. General Criteria
- b. Specific Criteria

Day 4. Interpretation of Pollution and Treatability

- a. Primary Treatment
- b. Secondary Treatment
- c. Tertiary Treatment
- d. Biological Treatment
- e. BOD& COD Reduction

Day 5. De–Oiling of Water

- a. Purpose of De – Oiling
- b. API Interceptor
- c. Parallel Plate and Corrugated Plate Interceptor (PPI and CPI)
- d. Flotation Units
- e. Flocculation Units
- f. Loose – Media or Fibrous – Media Coalesces
- g. Bio treaters
- h. Nomenclature

TRAINING CERTIFICATE

MAESTRO CONSULTANTS Certificate of Completion for delegates who attend and complete the training course.

METHODOLOGY

Our courses are highly interactive, typically taking a case study approach that we have found to be an effective method of fostering discussions and transferring knowledge. Participants will learn by active participation during the program through the use of individual exercises, questionnaires, team exercises, training videos and discussions of “real life” issues in their organizations. The material has been designed to enable delegates to apply all of the material with immediate effect back in the workplace.