

# € TRAINING

Oil Water Treatment Technology





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## Introduction:

The Oil Water Treatment Technology training program provides participants with practical skills for treating oil-contaminated water efficiently. Through hands-on training, attendees learn about separation techniques, filtration processes, and chemical treatments, enabling them to address oil-water treatment challenges effectively.

## Program Objectives:

At the end of this program, participants will be able to:

- Learn the details of the impact of effective oilfield water chemistry.
- Comprehend how to assess the oilfield production liquid separation principles.
- Understand the importance of proper water treatment.
- Appreciate the importance of reusing produced water.
- Develop skills necessary to evaluate the technologies used in oil and water separation.

## Targeted Audience:

- Engineering and Technical Personnel involved in water treatment.
- Maintenance Coordinators.
- Operations and Manufacturing Managers and Supervisors.
- Foremen and Team Leaders.
- Plant and Field Engineers.

## Program Outlines:

### Unit 1:

#### Oilfield Water Chemistry:

- The Nature, Chemistry and Composition of Hydrocarbons.
- Water Chemistry Fundamentals.
- Environmental Regulations and Water Specifications.

- Environmental Impacts Caused by Produced Water.
- Water Sampling and Analysis: Test Methods for Oil and Grease in Water, Zero Liquid Discharge ZLD.

## Unit 2:

### Oilfield Production Liquid Separation Principles

- Produced Water Generation and Production and Management Practices.
- Wastewater recycle/reuse.
- Water Scaling, Corrosion Control and Microbiology of Water.
- Emulsions / Stabilization, Destabilization.
- Simulation Software to predict water quality for injection.
- Case Study Scaling Software demonstration.

## Unit 3:

### Crude Oil Desalting:

- Principles of flotation: Dissolved/ Induced/ dispersed Air/ Gas Flotation.
- Key Design Parameters of Flotation: Air-To-Solids Ratio.
- Henrys & Stokes Laws.
- Nucleus & Rate of Rise Theory.

## Unit 4:

### Separation and Treatment I:

- Mechanical Filters & Filtration Technologies.
- Gravity Separation Systems.
- Skim Tanks & Piles.
- API Separators.
- Plate Coalescers.
- Evaporative processes.

## Unit 5:

### Separation and Treatment II:

- Desalting Technologies.
- Electro deionization.
- Ion exchange.
- Membrane processes.
- Desalination.