

OILFIELD WATER TREATMENT PROGRAM

PRD048

COURSE DESCRIPTION

Water produced during the extraction of oil and gas reserves need to be properly managed to mitigate any environmental impacts to existing water supplies. Produced waters are generally characterized as brackish water solutions containing high concentrations of chemicals, dissolved minerals and salts. This course provides an overview of the main water-oil treatment systems. It covers chemistry and treatment of the main water and oil related problems of mineral scales, corrosion, bacteria, and oily water will be reviewed both from the theoretical and practical aspects. Also, produced water treatment equipment and typical water quality specifications will be reviewed as well as water injection and disposal systems.

COURSE GOAL

To enhance the participants' knowledge, skills, and attitudes necessary to understand water treatment and related problems in oil and gas production and their solutions.

COURSE OBJECTIVES

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

- Understand the basics of oilfield water chemistry.
- Treat oil and water.
- Detect potential problems before system damage occurs.
- Be familiar with produced (oily) water treatment options and related treatment equipment.
- Use the knowledge gained to identify typical system problems and to propose solutions.

WHO SHOULD ATTEND

- Managers.
- Engineers.
- Chemists.
- Operators.
- Lab technician I.
- Lab technician II.

COURSE DURATION

5 Working Days

COURSE OUTLINES

- Introduction to Oil Field.
- Water –Oil Chemistry Fundamentals.
- Water Sampling.
 - Available Techniques and Methods.
 - Reasons for Sampling.
 - Sampling Best Locations.
 - Sampling Procedures.
- Water Treatment Definitions: Main Terminology.
- Water Treatment Technology.
- Water Treatment Microbiology.
- Water Lab Glassware.
- Water Analysis.
- Water Formed Scales.
- Collection Water Sample for Analysis.
- Preparation Standards Solutions for Water Analysis.
- How to Perform Water Analysis.
- Monitoring Water Treatment Plants.
- Water Treatment Techniques.
- Rectification and Sand Removal.
- Oxygen Removal by De-Aeration.
- Scale Inhibition.
- Bacteria Killing Injection Water Quality Determination.
- Scale Deposition Inhibition & Prevention.
- Corrosion Control.
- Microorganisms Control.
- Produced Water Discharge.
- Disposal and Treatment Principles.
- Oil Treatment Technology.
- Produced Water Treating Equipment.
- Theory of Operation, Advantages and Disadvantages.
- The Importance of Oil Droplet Size.
- Water Injection and Disposal Systems.
- Theory of Operation Corrosion and Scales.
- Biological Control Case Study.