

Course Outline

OIL and GAS PRODUCTION CHEMISTRY

by **LDI Instructor**

Introduction

This course addresses the various chemical and chemistry aspects related to onshore and offshore O&G production operations. It explains the natural chemical processes and their consequences that take place during a field's production lifecycle. Since new problems will arise as the composition of the produced fluid changes, production personnel need to learn how to manage the challenges caused by the changing nature of production and understand their impacts on the environment.

The course also covers the chemicals used in handling oil and gas production. As oil fields mature and more water are produced, different chemicals will be used to maintain production. It will explain the methods applied to determine the need for chemical treating, how to select the proper chemicals and how to test for chemical compatibility with the formation and other chemicals. Requirements for environmentally friendly products will be discussed. Participants will learn how the use of chemicals can prevent problems, improve production and economics, and extend the life of the production equipment.

What You Will Learn

- Recognize corrosive conditions and monitor corrosion rates
- Select and apply corrosion inhibitors
- Predict and treat emulsions using demulsifiers
- Understand causes and control of foaming
- Predict scale forming conditions
- Select and apply scale inhibitors
- Control gas hydrate formation
- Predict and control paraffin (wax) deposition
- Evaluate methods for asphaltene control
- Scavenge low concentrations of H₂S
- Select and apply reverse demulsifiers (water clarifiers)
- Select environmentally friendly chemicals

Who Should Attend

- Production engineers and supervisors
- Process engineers
- Petroleum engineers
- Facilities engineers
- Environmental engineers and specialists
- Well service engineers and supervisors
- Chemists and lab technicians

Course Outline

Day-1

- Introduction
- Sampling and analysis
- Oilfield Chemical Phenomena: Corrosion, Microbial activity, Emulsions, Foaming, Wax, Asphaltene, Hydrates, scaling

Day-2

- The Affected Systems: Oilfield Production, Gas Processing, Produced Water, Water Injection, Oil & Gas Transmission, Oil Storage, Utilities
- Corrosion fundamentals, Corrosion inhibitor selection and application
- Predicting and monitoring corrosion rates, Microbiologically Induced Corrosion and biocides

Day-3

- The basics of oil field emulsions
- Demulsifier selection and field application
- Reverse Demulsifier selection and field application

Day-4

- Compounds that cause scaling, Prediction of scaling tendency, Scale inhibitors,
- Chemicals used as H₂S scavengers, Application of scavengers

Day-5

- Green chemicals (Environmentally friendly chemicals)
- Chemical Regulations & Controls

To enroll or get more information, please contact

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