

Water Injection for Production System



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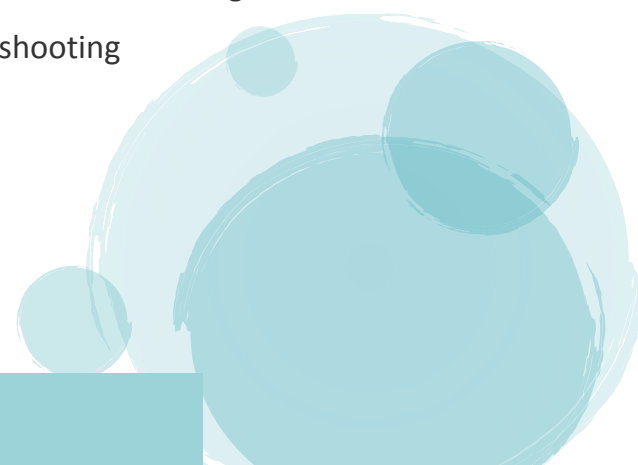
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Introduction:

This course is designed to ensure effective understanding of the water injection system as a reservoir primary recovery methodology in oil fields to maintain the reservoir pressure with special attention to the system components from the supply source to injection point in the reservoir, which permit the operator's best insurance to achieve well safe and effective operations.

The course is composed as modules, which include exercises, group discussions and quizzes for full comprehension of the course topics relevant to all functions of the water injection system and its operations.

Objectives:

- UNDERSTAND the relation between water injection and the reservoir pressure maintenance.
 - GAIN the basic knowledge of the operating fundamentals of the system
 - ACQUIRE a fundamental knowledge of the water injection well construction
 - UNDERSTAND the basic water injection quality control and monitoring
 - GAIN experience in the system problems and troubleshooting
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Who should attend?

This course is specifically designed for, but not limited to employees in the oil and gas industry who holds the following roles:

- Production Engineers
- Production Operations Staff
- Production Process Staff
- Operation Engineers
- Field Services Engineers
- Reservoir Engineer
- Petroleum Engineers

Course Outline

Module1: Reservoirs and Rock Properties

- Definition of Reservoir
 - Reservoir Heterogeneities
 - Reservoir Characteristics (Porosity, Permeability, Reservoir pressure, Reservoir temperature, Formation damage, etc.)
 - Factors affecting reservoir flow
 - Super-saturated reservoir
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Module2: Water Injection Well Design and Construction

- Water injection wells construction
- Basic well completion
- Types of water injection wells
- Operating parameters of wells

Module3: Introduction to Water Injection

- Definition of water injection
- Reasons for water injection
- Reservoir drive mechanisms

Module4: Water flooding

- Define water flooding
- Types of water flood patterns
- Factors affect water flow process
- Water flooding advantages

Module5: Injection Water Impurities

- Water supply sources for water injection
- Aquifer water, impurities and quality control
- Seawater, impurities and quality control
- Scaling problem
- Fill accumulation problem
- Importance of water source compatibility