



OIL AND GAS

Applied Water Technology in Oil and Gas Production

Course code: OG-019

SPARK TRAINING

Professional training courses for leaders, specialists, and organizations seeking practical capability development.

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— Workshop Overview

Water management is a critical component of oil and gas production, directly influencing asset integrity, production efficiency, environmental compliance, and operating costs. This course provides participants with practical knowledge of oilfield water chemistry, produced water treatment, scaling and corrosion control, separation technologies, and water disposal practices to support safe, efficient, and environmentally responsible operations.

Why Attend

The course combines technical presentations, engineering calculations, software demonstrations, case studies, practical exercises, group discussions, and real-world oilfield applications to enhance both theoretical understanding and practical skills.

Who Should Attend

Production engineers
Process engineers
Petroleum engineers
Water treatment specialists
Operations and facility engineers
Corrosion and integrity engineers
Environmental professionals working in the oil and

— Learning Objectives

- Understand the chemistry and characteristics of oilfield water systems
- Identify causes of scaling, corrosion, and microbiological contamination
- Apply water treatment and separation technologies effectively
- Evaluate produced water management and disposal methods
- Utilize engineering tools to predict scaling and corrosion risks
- Improve operational performance while maintaining environmental compliance
- Apply best practices for water reuse and sustainability in oil and gas operations

Course Outline

**DAY
1**

Fundamentals of Oilfield Water Chemistry

- Understanding the chemical characteristics of oilfield water systems
- Reviewing the principles of water chemistry relevant to production operations
- Understanding microbiological influences on water treatment processes
- Identifying scaling mechanisms and methods for scale prevention
- Understanding corrosion processes and mitigation techniques
- Reviewing environmental regulations and produced water quality specifications
- Understanding zero liquid discharge concepts and sustainable water management practices
- Applying best practices for water sampling, testing, and laboratory analysis

**DAY
2**

Produced Water Generation and Separation Principles

- Understanding the sources and characteristics of produced water in oil and gas operations
- Reviewing produced water management strategies throughout the production lifecycle
- Assessing environmental impacts associated with produced water discharge and handling
- Understanding emulsion formation, stabilization, and separation mechanisms
- Applying fluid behavior principles affecting oil-water separation processes
- Understanding hydrocarbon composition and its influence on water treatment
- Reviewing equilibrium chemistry, solubility principles, and scale formation mechanisms
- Identifying common oilfield scales and operational challenges

**DAY
3**

Produced Water Treatment Technologies and Scale Control

- Performing solubility and scale prediction calculations for production systems
- Understanding co-precipitation mechanisms and scaling behavior
- Applying engineering principles to evaluate scale formation risks
- Utilizing commercial software tools for scale prediction and corrosion assessment
- Understanding corrosion control strategies for production facilities
- Reviewing gas flotation technologies used in produced water treatment
- Evaluating flotation system performance and key operating parameters
- Practical workshop: Scale prediction and produced water treatment case study

**DAY
4**

Advanced Separation and Water Treatment Technologies

- Understanding desalting processes and associated treatment equipment
- Reviewing electro-deionization and advanced water purification technologies

- Applying gravity separation principles for oil, gas, and water processing
- Understanding skim tanks, separators, and oil removal systems
- Evaluating plate coalescers and enhanced separation technologies
- Reviewing filtration systems, membrane technologies, and ion exchange processes
- Practical case study: Selecting appropriate treatment technologies for different produced water conditions

DAY
5

Produced Water Disposal and Sustainable Water Management

- Understanding produced water injection and disposal system design principles
- Managing corrosion, biological activity, and scaling within disposal systems
- Reviewing treatment processes prior to produced water disposal or reuse
- Addressing transportation and handling challenges associated with produced water
- Applying de-oiling, desalination, disinfection, and organic removal technologies
- Exploring wastewater recycling, reuse strategies, and evaporative treatment processes
- Final workshop: Integrated produced water management strategy, course review, and key lessons learned

— Upcoming Classroom Dates

DATE	LOCATION	FEE
18 - 22 January 2027	Amsterdam - Netherlands	€1,900
15 - 19 February 2027	London - United Kingdom	€2,100
15 - 19 March 2027	Istanbul - Türkiye	€1,400
19 - 23 April 2027	Vienna - Austria	€2,250
17 - 21 May 2027	Barcelona - Spain	€1,600
21 - 25 June 2027	Paris - France	€2,250
19 - 23 July 2027	Frankfurt - Germany	€1,700
16 - 20 August 2027	Barcelona - Spain	€1,600

— Certificate and Registration

Participants who attend and complete the full programme receive a SPARK Training Certificate of Completion. For registration, in-house delivery, or availability questions, contact info@sparktraining.eu or +31 85 115 0004.