



COURSE OVERVIEW DE0814 **Oilfield Water Management**

Course Title

Oilfield Water Management

Course Date/Venue

September 21-25, 2026/Eagle Meeting Room,
VOGO Abu Dhabi Golf Resort & Spa formerly
Westin Abu Dhabi Golf Resort & Spa, Abu Dhabi,
UAE

Course Reference

DE0814

Course Duration/Credits

Five days/2.75 CEUs/27.5 PDHs

Course Description



This practical and highly-interactive course includes various practical sessions and exercises. Theory learnt will be applied using our state-of-the-art simulators.

This comprehensive course provides participants with an in-depth understanding of water management throughout the oil and gas field lifecycle. The course covers water production, treatment, handling, injection, disposal, reuse, environmental compliance, reservoir management and emerging technologies. Participants will learn how to optimize water resources, minimize operating costs, improve hydrocarbon recovery, ensure regulatory compliance and implement sustainable water management strategies in onshore and offshore operations.



Further, the course will also discuss the sources and types of oilfield water including water chemistry fundamentals and produced water characterization; the water production mechanisms, regulatory and environmental framework and produced water treatment fundamentals; the primary water treatment systems, secondary water treatment processes and advanced water treatment technologies; the chemical treatment programs and water treatment performance monitoring; and the fundamentals of water injection, injection water quality requirements and waterflood design and optimization.



During this interactive course, participants will learn the injection well performance, reservoir surveillance and monitoring and enhanced oil recovery water management; the produced water reuse strategies, produced water disposal methods and corrosion management in water systems; the scale formation and control, microbiological control and water handling infrastructure management; the integrated water management planning, digital water management technologies and economic evaluation of water management projects; and the sustainability and environmental stewardship and emerging water treatment innovations.

Course Objectives/Outcomes & Benefits for the Participants

Upon the successful completion of this course, each participant will be able to:-

- Apply and gain a comprehensive knowledge on oilfield water management
- Identify the sources and types of oilfield water including water chemistry fundamentals and produced water characterization
- Recognize water production mechanisms, regulatory and environmental framework and produced water treatment fundamentals
- Describe primary water treatment systems, secondary water treatment processes and advanced water treatment technologies
- Develop chemical treatment programs and apply water treatment performance monitoring
- Discuss the fundamentals of water injection, injection water quality requirements and waterflood design and optimization
- Employ injection well performance, reservoir surveillance and monitoring and enhanced oil recovery water management
- Apply produced water reuse strategies, produced water disposal methods and corrosion management in water systems
- Carryout scale formation and control, microbiological control and water handling infrastructure management
- Apply integrated water management planning, digital water management technologies and economic evaluation of water management projects
- Employ sustainability and environmental stewardship and discuss emerging water treatment innovations

Exclusive Smart Training Kit - H-STK®



*Participants of this course will receive the exclusive “Howard Smart Training Kit” (H-STK®). The H-STK® consists of a comprehensive set of technical content which includes **electronic version** of the course materials conveniently saved in a **Tablet PC**.*

Who Should Attend

This course provides an overview of all significant aspects and considerations on oilfield water management for practicing production and reservoir engineers interested in improving the water management of fields. Participants should be proficient in the use of Excel. Experience with OFM and Pipesim would be useful but not necessary.

Course Certificate(s)

Internationally recognized certificates will be issued to all participants of the course who completed a minimum of 80% of the total tuition hours.

Certificate Accreditations

Haward's certificates are accredited by the following international accreditation organizations: -

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British Accreditation Council (BAC)

Haward Technology is accredited by the **British Accreditation Council** for **Independent Further and Higher Education** as an **International Centre**. Haward's certificates are internationally recognized and accredited by the British Accreditation Council (BAC). BAC is the British accrediting body responsible for setting standards within independent further and higher education sector in the UK and overseas. As a BAC-accredited international center, Haward Technology meets all of the international higher education criteria and standards set by BAC.

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The International Accreditors for Continuing Education and Training (IACET - USA)

Haward Technology is an Authorized Training Provider by the International Accreditors for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this authority, Haward Technology has demonstrated that it complies with the **ANSI/IACET 2018-1 Standard** which is widely recognized as the standard of good practice internationally. As a result of our Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for its programs that qualify under the **ANSI/IACET 2018-1 Standard**.

Haward Technology's courses meet the professional certification and continuing education requirements for participants seeking **Continuing Education Units (CEUs)** in accordance with the rules & regulations of the International Accreditors for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

Haward Technology Middle East will award **2.75 CEUs** (Continuing Education Units) or **27.5 PDHs** (Professional Development Hours) for participants who completed the total tuition hours of this program. One CEU is equivalent to ten Professional Development Hours (PDHs) or ten contact hours of the participation in and completion of Haward Technology programs. A permanent record of a participant's involvement and awarding of CEU will be maintained by Haward Technology. Haward Technology will provide a copy of the participant's CEU and PDH Transcript of Records upon request.

Course Fee

US\$ 8,000 per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Course Instructor(s)

This course will be conducted by the following instructor(s). However, we have the right to change the course instructor(s) prior to the course date and inform participants accordingly:



Dr. Hesham Abdou, PhD, MSc, BSc, is a **Senior Drilling & Petroleum Engineer** with over **30 years** of integrated industrial and academic experience as a **University Professor**. His specialization widely covers in the areas of **Drilling & Completion Technology, Directional Drilling, Horizontal & Sidetracking, Drilling Operation Management, Drilling & Production Equipment, ERD Drilling & Stuck Pipe Prevention, Natural & Artificial Flow Well Completion, Well Testing Procedures & Evaluation, Well Performance, Coiled Tubing Technology, Oil Recovery Methods Enhancement, Well Integrity Management, Well Casing & Cementing, Acid Gas Removal, Heavy Oil Production & Treatment Techniques, Crude Oil Testing & Water Analysis, Crude Oil & Water Sampling Procedures, Equipment Handling Procedures, Crude & Vacuum Process Technology, Gas Conditioning & Processing, Cooling Towers Operation & Troubleshooting, Sucker Rod Pumping, ESP & Gas Lift, PCP & Jet Pump, Pigging Operations, Electric Submersible Pumps (ESP), Progressive Cavity Pumps (PCP), Water Flooding, Water Lift Pumps Troubleshooting, Water System Design & Installation, Water Networks Design Procedures, Water Pumping Process, Pipelines, Pumps, Turbines, Heat Exchangers, Separators, Heaters, Compressors, Storage Tanks, Valves Selection, Compressors, Tank & Tank Farms Operations & Performance, Oil & Gas Transportation, Oil & Gas Production Strategies, Artificial Lift Methods, Piping & Pumping Operations, Oil & Water Source Wells Restoration, Pump Performance Monitoring, Rotor Bearing Modelling, Hydraulic Repairs & Cylinders, Root Cause Analysis, Vibration & Condition Monitoring, Piping Stress Analysis, Amine Gas Sweetening & Sulfur Recovery, Heat & Mass Transfer and Fluid Mechanics.**

During his career life, Dr. Hesham held significant positions and dedication as the **General Manager, Petroleum Engineering Assistant General Manager, Workover Assistant General Manager, Workover Department Manager, Artificial Section Head, Oil & Gas Production Engineer** and **Senior Instructor/Lecturer** from various companies and universities such as the Cairo University, Helwan University, British University in Egypt, Banha University and Agiba Petroleum Company.

Dr. Hesham has a **PhD** and **Master** degree in **Mechanical Power Engineering** and a **Bachelor** degree in **Petroleum Engineering**. Further, he is a **Certified Instructor/Trainer** and a **Peer Reviewer**. Dr. Hesham is a member of Egyptian Engineering Syndicate and the Society of Petroleum Engineering. Moreover, he has published technical papers and journals and has delivered numerous trainings, workshops, courses, seminars and conferences internationally.

Training Methodology

All our Courses are including **Hands-on Practical Sessions** using equipment, State-of-the-Art Simulators, Drawings, Case Studies, Videos and Exercises. The courses include the following training methodologies as a percentage of the total tuition hours:-

- 30% Lectures
- 20% Practical Workshops & Work Presentations
- 30% Hands-on Practical Exercises & Case Studies
- 20% Simulators (Hardware & Software) & Videos

In an unlikely event, the course instructor may modify the above training methodology before or during the course for technical reasons.

Learning Design & Customization

This course can be customized to the exact requirements of clients. Haward Technology is so proud of our huge capabilities in tailoring our courses to the training needs of our valued clients.

Accommodation

Accommodation is not included in the course fees. However, any accommodation required can be arranged at the time of booking.

Course Program

The following program is planned for this course. However, the course instructor(s) may modify this program before or during the course for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

Day 1: Monday, 21st of September 2026

0800 – 0830	<i>Registration & Coffee</i>
0830 – 0845	<i>Welcome & Introduction</i>
0845 – 0900	<i>PRE-TEST</i>
0900 – 0930	<i>Introduction to Oilfield Water Management</i> <i>Role of Water in Oil and Gas Operations • Water Lifecycle in Petroleum Production • Challenges of Produced Water Management • Water Management Objectives and Strategies</i>
0930 – 0945	<i>Break</i>
0945 – 1030	<i>Sources & Types of Oilfield Water</i> <i>Formation Water Characteristics • Injection Water Sources • Produced Water Generation Mechanisms • Flowback and Completion Fluids</i>
1030 – 1100	<i>Water Chemistry Fundamentals</i> <i>Major Ions and Dissolved Solids • Salinity Classification Systems • Water Quality Parameters • Chemical Compatibility Considerations</i>
1100 – 1200	<i>Produced Water Characterization</i> <i>Physical Properties of Produced Water • Chemical Composition Analysis • Biological Contaminants • Sampling and Laboratory Testing Procedures</i>
1200 – 1215	<i>Break</i>
1215 – 1300	<i>Water Production Mechanisms</i> <i>Water Influx from Aquifers • Water Coning and Cresting • Channeling and Breakthrough Mechanisms • Water Production Trends During Field Life</i>



1300 – 1350	Regulatory & Environmental Framework Water Management Regulations • Environmental Impact Assessments • Discharge Standards and Permits • Sustainability and ESG Requirements
1350 – 1400	Recap Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1400	Lunch & End of Day One

Day 2: Tuesday, 22nd of September 2026

0800 - 0845	Produced Water Treatment Fundamentals Treatment Objectives and Requirements • Water Quality Specifications • Treatment Process Selection Criteria • Treatment System Design Considerations
0845 - 0930	Primary Water Treatment Systems Gravity Separation Principles • Free-Water Knockout Systems • API Separators • Hydrocyclone Technologies
0930 - 0945	Break
0945 – 1100	Secondary Water Treatment Processes Induced Gas Flotation Systems • Dissolved Gas Flotation Technologies • Coalescing Equipment Applications • Fine Solids Removal Methods
1100 – 1200	Advanced Water Treatment Technologies Membrane Filtration Systems • Reverse Osmosis Applications • Nanofiltration Technologies • Electrodialysis Processes
1200 - 1215	Break
1215 - 1300	Chemical Treatment Programs Demulsifier Selection and Application • Scale Inhibitor Programs • Corrosion Control Chemicals • Biocide Treatment Strategies
1300 - 1350	Water Treatment Performance Monitoring Water Quality Monitoring Methods • Key Performance Indicators • Laboratory Testing Procedures • Troubleshooting Treatment Systems
1350 – 1400	Recap Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1400	Lunch & End of Day Two

Day 3: Wednesday, 23rd of September 2026

0800 - 0845	Fundamentals of Water Injection Objectives of Water Injection • Pressure Maintenance Strategies • Reservoir Sweep Efficiency Concepts • Waterflood Management Principles
0845 - 0930	Injection Water Quality Requirements Filtration Specifications • Oxygen Removal Requirements • Bacterial Control Measures • Compatibility Testing Procedures
0930 - 0945	Break
0945 – 1100	Waterflood Design & Optimization Injection Pattern Selection • Voidage Replacement Calculations • Injection Rate Optimization • Reservoir Surveillance Techniques
1100 – 1200	Injection Well Performance Injectivity Evaluation Methods • Formation Damage Mechanisms • Well Stimulation Techniques • Injection Profile Monitoring
1200 - 1215	Break



1215 - 1300	Reservoir Surveillance & Monitoring Pressure Monitoring Systems • Tracer Technology Applications • Production Response Analysis • Sweep Efficiency Evaluation
1300 - 1350	Enhanced Oil Recovery Water Management Polymer Flood Water Requirements • Low-Salinity Waterflooding • Chemical EOR Compatibility • EOR Water Treatment Considerations
1350 - 1400	Recap Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1400	Lunch & End of Day Three

Day 4: Thursday, 24th of September 2026

0800 - 0845	Produced Water Reuse Strategies Water Recycling Opportunities • Reuse for Injection Operations • Agricultural and Industrial Applications • Economic Evaluation of Reuse Projects
0845 - 0930	Produced Water Disposal Methods Disposal Well Operations • Deep Well Injection Systems • Surface Discharge Options • Regulatory Compliance Requirements
0930 - 0945	Break
0945 - 1100	Corrosion Management in Water Systems Corrosion Mechanisms in Oilfield Operations • Corrosion Monitoring Techniques • Corrosion Inhibitor Programs • Integrity Management Strategies
1100 - 1200	Scale Formation & Control Scale Formation Mechanisms • Common Oilfield Scale Types • Scale Prediction Methods • Prevention and Remediation Techniques
1200 - 1215	Break
1215 - 1300	Microbiological Control Sulfate-Reducing Bacteria Impacts • Biofilm Formation Mechanisms • Microbiologically Influenced Corrosion • Biocide Treatment Optimization
1300 - 1350	Water Handling Infrastructure Management Pipelines and Flowlines • Storage Tanks and Facilities • Pumping and Transfer Systems • Asset Integrity Assessment
1350 - 1400	Recap Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1400	Lunch & End of Day Four

Day 5: Friday, 25th of September 2026

0800 - 0845	Integrated Water Management Planning Water Balance Development • Field-Wide Water Management Strategies • Risk Assessment Methodologies • Lifecycle Water Planning
0845 - 0930	Digital Water Management Technologies Real-Time Monitoring Systems • Digital Twins for Water Networks • Data Analytics Applications • Artificial Intelligence for Optimization
0930 - 0945	Break
0945 - 1100	Economic Evaluation of Water Management Projects Capital and Operating Cost Analysis • Cost-Benefit Assessment Methods • Water Treatment Economics • Investment Prioritization Techniques

1100 – 1200	Sustainability & Environmental Stewardship <i>Water Conservation Initiatives • Carbon Footprint Reduction Opportunities • Circular Water Management Concepts • ESG Performance Metrics</i>
1200 - 1215	<i>Break</i>
1215 – 1245	Emerging Water Treatment Innovations <i>Advanced Oxidation Processes • Nanotechnology Applications • Zero Liquid Discharge Systems • Smart Chemical Treatment Programs</i>
1245 – 1315	Industry Case Studies and Best Practices <i>Offshore Produced Water Management Case Study • Waterflood Optimization Project Example • Produced Water Reuse Success Stories • Lessons Learned and Industry Best Practices</i>
1315 – 1330	Course Conclusion <i>Using this Course Overview, the Instructor(s) will Brief Participants about the Course Topics that were Covered During the Course</i>
1330 – 1345	POST-TEST
1345 – 1400	<i>Presentation of Course Certificates</i>
1400	<i>Lunch & End of Course</i>

Course Learning Outcomes

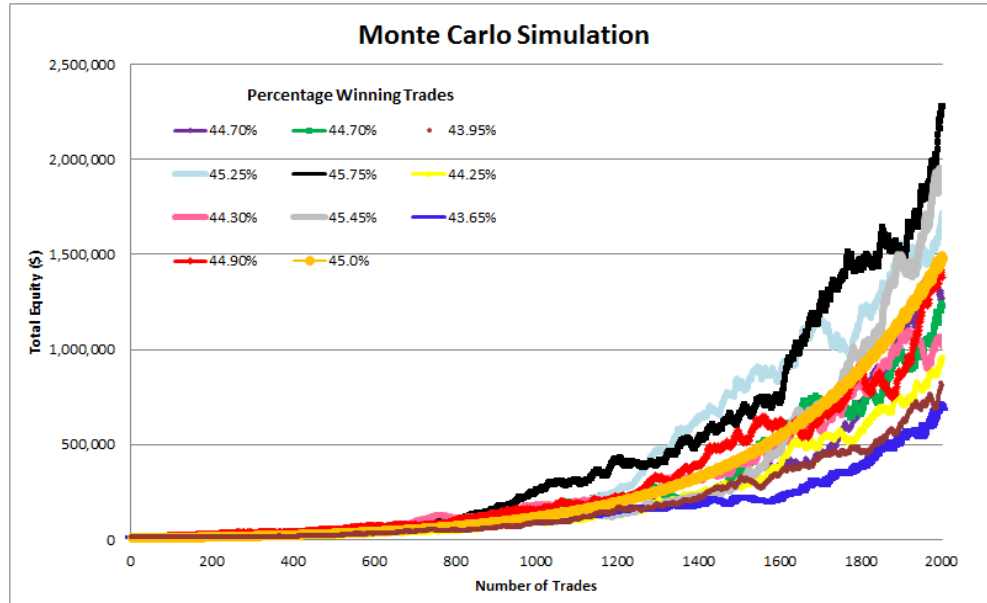
Upon completion of this course, participants will be able to:

- Understand the sources, characteristics, and challenges of oilfield water management
- Evaluate produced water quality and treatment requirements
- Design and optimize water treatment and handling systems
- Manage water injection programs for pressure maintenance and enhanced recovery
- Assess and mitigate corrosion, scaling, and microbiological risks
- Develop produced water reuse and disposal strategies
- Apply regulatory and environmental compliance requirements
- Perform economic evaluations of water management projects
- Utilize digital technologies and data analytics for water system optimization
- Implement integrated and sustainable water management practices across the oilfield lifecycle
- Apply industry best practices to improve operational efficiency, reservoir performance, and environmental stewardship



Simulator (Hands-on Practical Sessions)

Practical sessions will be organized during the course for delegates to practice the theory learnt. Delegates will be provided with an opportunity to carryout various exercises using the “Monte Carlo Simulation”.



Monte Carlo Simulation

Course Coordinator

Mari Nakintu, Tel: +971 2 30 91 714, Email: mari1@haward.org