Water Injection for Production System

Gain insight on water injection system components

26 - 30 October 2015, Kuala Lumpur, Malaysia

Petrosync Distinguished Instructor
Magdi Taha El Naggar
Managing Director
Oil Fields Global Consultants (OFGC)

- Over 39 years dedicated outstanding service in oil and gas field with excellent HSE record
- Officially certified & registered as Professional Petroleum Engineering Consultant (License 116/7)
- Extensive training capabilities, currently joint venturing with several major professional international training institutes and conducting several training at Singapore, Malaysia, Vietnam, Indonesia, Egypt etc

Course 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

Specially Designed for

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

HYBRID TRAINING SOLUTIONS

FOCUS TRAINING • REDUCE COST • ENHANCED RESULTS

Over the years, there has been a growing demand for hybrid training programs. It is an excellent option to maximize your training dollar for your specific training needs. We make it possible to run a training program that is customized totally to your training needs at a fraction of an in-house budget!

If you like to know more about this excellent program, please contact us on +65 6415 4500 or email general@petrosync.com
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.

Petrosync Distinguished Instructor

Magdi Taha El Naggar
Managing Director
Oil Fields Global Consultants (OFGC)

Magdi is an independent consultant having more than 39 years of experience in Petroleum industry. He has extensive experience in IWCF and IADC certification. He also has extensive professional experience in various phase of petroleum, reservoir, production, drilling & workover engineering and field operations with several multinational companies including ARAMCO (Saudi Arabia) and ADCO (UAE). Magdi is experienced professional in all phases of well intervention operations utilizing coiled tubing and well emergency cases, well control as well as extended reach operations. He also has experience in conducting training with several major professional international training institutes at Singapore, Malaysia, Vietnam, Indonesia, China, Egypt, Oman and so on. In additional, he has the extensive experience in full field development studies, reservoir studies, production enhancement for oil fields as well as various types of wells.

**CLIENT LIST INCLUDES:**
- Murphy
- Petrofac
- Talisman
- Sapura
- Schlumberger
- Total
- UMW
- Iraq Oil Company
- OXY
- Gulf of Suez Oil Company
- Badredine Oil Company
- WEPCO
- OGS
- Apex Dubai
- GlobalPetroSolutions

**PROGRAM SCHEDULE**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
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<tbody>
<tr>
<td>08:00 - 09:00</td>
<td>Registration (Day 1)</td>
</tr>
<tr>
<td>09:00 - 11:00</td>
<td>Session I</td>
</tr>
<tr>
<td>11:00 - 11:15</td>
<td>Refreshment &amp; Networking Session I</td>
</tr>
<tr>
<td>11:15 - 13:00</td>
<td>Session II</td>
</tr>
<tr>
<td>13:00 - 14:00</td>
<td>Lunch</td>
</tr>
<tr>
<td>14:00 - 15:30</td>
<td>Session III</td>
</tr>
<tr>
<td>15:30 - 15:45</td>
<td>Refreshment &amp; Networking Session II</td>
</tr>
<tr>
<td>15:45 - 17:00</td>
<td>Session IV</td>
</tr>
<tr>
<td></td>
<td>End of Day</td>
</tr>
</tbody>
</table>
Module 1: 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

Module 2: Water Injection Well Design and Construction
- Water injection wells construction
- Basic well completion
- Types of water injection wells
- Operating parameters of wells

Module 3: Introduction to Water Injection
- Definition of water injection
- Reasons for water injection
- Reservoir drive mechanisms

Module 4: Waterflooding
- Define waterflooding
- Types of waterflood patterns
- Factors affect water flow process
- Waterflooding advantages

Module 5: 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

Practical Exercises and Case Studies will be provided

Limited Attendees
The course has limited seats to ensure maximum learning and experience for all delegates.

Certificate of Attendance
You will receive a Certificate of Attendance bearing the signatures of the Trainer upon successful completion of the course. This certificate is proof of your continuing professional development.

Interactive Training
You will be attending training designed to share both the latest knowledge and practical experience through interactive sessions. This will provide you with a deeper and more long-term understanding of your current issues.

High Quality Course Materials
Printed course manual will provide you with working materials throughout the course and will be an invaluable source of reference for you and your colleagues afterward. You can follow course progress on your laptop with soft copies provided.
SAVE COST • IMPROVE PERFORMANCE • REDUCE RISK

PetroSync understands that in current economic climate, getting an excellent return on your training investment is critical for all our clients. This excellent training can be conducted exclusively for your organization. The training can be tailored to meet your specific needs at your preferred location and time. We will meet you anywhere around the globe.

If you like to know more about this excellent program, please contact us on +65 6415 4502 or email general@petrosync.com

WATER INJECTION FOR PRODUCTION SYSTEM

26-30 October 2015, Kuala Lumpur, Malaysia

Course Agenda

Module 6: Water Treatment
- Produced water treatments
- De-oxygenation
- Reasons for treating produced water
- Subsea water injection treatment

Module 7: Water Injection Systems
- Main components of a water injection system
- Types of pumps in water injection system
- Purpose of pumps
- Filtration of water
- Purpose of injection well manifolds

Module 8: Water Quality Monitoring
- Requirement for water quality monitoring
- Principle of particle size analysis
- Turbidity
- Different types of testing methods

Module 9: Operation of the Water Injection System
- Water injection methodologies
- Key operating parameters of the water injection system
- Water performance calculation (Injection water volume calculations)
- Subsea water injection

Module 10: Field HSE for Water Injection System
- Field PPEs
- Water Injection system General HSE Procedures
- Procedures for Handling Possible Associated Gases With the Produced Water From Aquifers.
- Procedures for Handling Seawater as Injection Water
- Contingency Plan for Handling Water Spills and Surface Leaks
- Environmental Requirements

Practical Exercises and Case Studies will be provided

IN-HOUSE SOLUTIONS

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Course Details

Title: Water Injection for Production System
Date: 26-30 October 2015
Location: Kuala Lumpur, Malaysia

INVESTMENT PACKAGES

<table>
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<tr>
<th>Investment Package</th>
<th>Deadline</th>
<th>FULL MASTERCLASS 26-30 OCT 2015</th>
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</thead>
<tbody>
<tr>
<td>Standard Price</td>
<td>23 OCT 2015</td>
<td>SGD $ 5,995</td>
</tr>
<tr>
<td>Early Bird Offer</td>
<td>25 SEPT 2015</td>
<td>SGD $ 5,795</td>
</tr>
<tr>
<td>Group Discount (3 or more Delegates)</td>
<td>23 OCT 2015</td>
<td>10% Discount for groups of 3 registering from the same organization at the same time</td>
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</tbody>
</table>

Group Discount is based on Standard Price
* To enjoy the promotion & discount offer, payment must be made before deadline
* For 7 or more delegates, please inquire for more attractive package.
* Prices include lunches, refreshments and materials. Promotion & discount cannot be combined with other promotional offers.
* Important: Please note that registration without payment will incur a SGD 200 administration fee.

DELEGATES DETAILS

1st Delegate Name: Mr | Mrs | Ms | Dr | Others:__________________________
Direct Line Number: _____________________________________________
Job Title: _______________________________________________________
Department: _____________________________________________________
Head of Department: _____________________________________________

2nd Delegate Name: Mr | Mrs | Ms | Dr | Others:__________________________
Direct Line Number: _____________________________________________
Job Title: _______________________________________________________
Department: _____________________________________________________
Head of Department: _____________________________________________

3rd Delegate Name: Mr | Mrs | Ms | Dr | Others:__________________________
Direct Line Number: _____________________________________________
Job Title: _______________________________________________________
Department: _____________________________________________________
Head of Department: _____________________________________________

INVOICE DETAILS

Attention Invoice to: ___________________________
Direct Line Number: ___________________________
Fax: ___________________________
Company: _______________________________________
Industry : _______________________________________
Address: _______________________________________
Postcode: _______________________________________
Country: _______________________________________
Email: _______________________________________

- Indicate if you have already registered by Phone ☐ Fax ☐ Email ☐ Web ☐
- If you have not received an acknowledgement before the training, please call us to confirm your booking.

PAYMENT METHODS

☐ By Credit Card :
Please debit my credit card: ☐ Visa ☐ MasterCard ☐ AMEX
Card Number: ____________________________
Expiration Date: ____________________________
Security Code: ____________________________

☐ By Direct Transfer: Please quote invoice number(s) on remittance advice
PetroSync Global Pte Ltd Bank details:
Account Name: PetroSync Global Pte Ltd
Bank Name : DBS Bank Ltd
Bank Code : 7171 - Bank Swift Code : DBSSSGSGXXX - Branch code : 288
Account No : SGD : 2889018980 - USD : 0288002682016
All bank charges to be borne by payer. Please ensure that PetroSync Global Pte Ltd receives the full invoiced amount.

Confirmation
I agree to PetroSync’s terms & conditions, payment terms and cancellation policy.

Authorized Signature: ____________________________

PAYMENT TERMS: Payment is due in full at the time of registration. Full payment is mandatory for event attendance.

PROGRAMME CONSULTANT

Name: Cay Aagen
Email: registration@petrosync.com
Phone: +65 6415 4500
Fax: +65 6826 4322

TERMS AND CONDITIONS

DISCLAIMER
Please note that trainers and topics were confirmed at the time of publishing; however, PetroSync may necessitate substitutions, alterations or cancellations of the trainers or topics. As such, PetroSync reserves the right to change or cancel any part of its published programme due to unforeseen circumstances. Any substitutions or alterations will be updated on our web page as soon as possible.

DATA PROTECTION
The information you provide will be safeguarded by PetroSync that may be used to keep you informed of relevant products and services. As an international group we may transfer your data on a global basis for the purpose indicated above. If you do not want us to share your information with other reputable companies, please tick this box ☐

CANCELLATION POLICY
You may substitute delegates at any time as long as reasonable advance notice is given to PetroSync. For any cancellation received in writing not less than fourteen (14) working days prior to the training course, you will receive credit voucher less a SGD $200 administration fee and any related bank or credit card charges.

Delegates who cancel less than fourteen (14) working days of the training course, or who do not attend the course, are liable to pay the full course fee and no refunds will be granted.

In the event that PetroSync cancels or postpones an event for any reason and that the delegate is unable or unwilling to attend in on the rescheduled date, you will receive a credit voucher for 100% of the contract fee paid. You may use this credit voucher for another PetroSync to be mutually agreed with PetroSync, which must occur within a year from the date of postponement.

PetroSync is not responsible for any loss or damage as a result of the cancellation policy. PetroSync will assume no liability whatsoever in the event this event is cancelled, rescheduled or postponed due to any Act of God, fire, act of government or state, war, civil commotion, insurrection, embargo, industrial action, or any other reason beyond management control.

CERTIFICATE OF ATTENDANCE

70% attendance is required for PetroSync’s Certificate of Attendance.

DETAILS

Please accept our apologies for mail or email that is incorrectly addressed. Please email us at registration@petrosync.com and inform us of any incorrect details. We will amend them accordingly.

CHARGES & FEE(s)

☐ For Payment by Direct Telegraphic Transfer, client has to bear both local and overseas bank charges.
☐ For credit card payment, there is additional 4% credit card processing fee.

I agree to PetroSync’s terms & conditions, payment terms and cancellation policy.