



**Society of Petroleum Engineers**

17–19 November 2009 | “Na Filippovskom” Conference Hall | Moscow, Russia

**Register by 20 October 2009**

# ***Production & Operations***

## ***Improving Oil Recovery Through Better Water Management***



### **Who Should Attend**

The workshop will be of interest to all who are concerned with current and potential solutions and ideas to increase oil and gas recovery by managing of water flooding front and produced water.

### **Steering Committee List**

**Co-Chairperson:**  
**Philippe Enkababian**  
Schlumberger

**Co-Chairperson:**  
**Mars Khasanov**  
Rosneft

**Alexander Batrashkin**  
BJ Services

**Jean-Mark Genkin**  
Shell

**Stanislav Zhdanov**  
VNIINEFT

**Igor Kuvshinov**  
Halliburton

**Nikolay Lanin**  
KogalymNIPINeft

**Gregory Malishev**  
SurgutNIPINeft Tuymen

**Timur Manapov**  
TNK-BP

**Oleg Pichugin**  
Concord

**Alexander Shandrygin**  
Schlumberger

**Don Wolcott**  
Raptor Oil & Gas Co.

### **WORKSHOP DESCRIPTION**

Excessive production of water today is the main criterion to abandon oil and gas wells, leaving large volumes of hydrocarbons behind. As water volumes increase, the effective capacities of the hydrocarbon production facilities are dramatically reduced. In addition to the traditional end-of-pipe techniques, the industry is now forced to identify and implement more effective solutions. Managing water in the reservoir becomes a prime focus for addressing reserves recovery through better diagnostics and optimization of waterflood programs.

This workshop addresses various aspects of water management at scales ranging from the reservoir down to the wellbore. A few topics are highlighted, including waterflood engineering & performance monitoring, conformance control and water shut-offs. Emphasis is placed on discussion of the best practices and lessons learnt from cases histories in Russia and nearby countries on the improvement of water management effectiveness.

### **WORKSHOP FOCUS**

The aim is to conduct a Workshop involving experts to discuss current and potential solutions and ideas to increase oil and gas recovery by managing of water flooding front and produced water.

The Workshop agenda is expected to include the following topics:

Water flood/drive systems management

- State-of-the-art techniques and challenges in modeling, design and implementation
- Innovative and effective monitoring and surveillance

Water control technology

- Problem identification and selection of solutions
- Successful applications of mechanical and chemical conformance control methods in both producer and injector wells

**Register online at [www.spe.org/atws](http://www.spe.org/atws)**





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**WORKSHOP**

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# WORKSHOP

## Sponsorship Support

Sponsorship support helps offset the cost of producing workshops and allows SPE to keep the attendance price within reach of operations-level individuals, those who benefit most from these technical workshops.

Sponsors benefit both directly and indirectly by having their names associated with a specific workshop.

While SPE prohibits any type of commercialism within the conference hall itself, the society recognizes that sponsoring companies offer valuable information to attendees outside the technical sessions.

## Sponsorship Categories

Sponsorships are offered on a first come basis. Please contact SPE to verify the availability of a particular sponsorship. Existing sponsors have the opportunity to renew the same level of sponsorship for annual workshops.

<b>Breakfast</b>	<b>Coffee Break</b>
<b>Lunch</b>	<b>Reception</b>
<b>Dinner</b>	<b>Materials</b>

## Sponsorship Benefits

In addition to onsite recognition; SPE will recognize sponsors on the SPE website and in all printed material for the workshop. Based on the sponsorship selected, sponsoring companies also receive logo visibility on promotional workshop items; a half-page, full-color ad in the workshop technical program; and up to two delegate passes to the workshop.

## For More Information

For a detailed list of available sponsorships, including benefits and pricing, contact Susan Wooten, Workshops at [swooten@spe.org](mailto:swooten@spe.org).

## WORKSHOP OBJECTIVES AND DELIVERABLES

Workshop participants will identify and debate key advances whose application improves production results, economic results, and operational reliability. We are especially keen to promote sharing best practices, exchange of ideas and experiences in technology application, and identify and recommend technologies and methods that are effective in mature fields.

This comprehensive and focused 3-day Workshop will allow participants to:

- Review the latest technical advances associated with water control and waterflood management.
- Network, share case histories and exchange ideas with participants from other companies and countries.

Identify specific value-added solutions for fields with produced water issues including beneficial uses, re-injection and disposal.

## WHO SHOULD ATTEND

The workshop is a limited attendance meeting for up to 80 people. It is designed for professionals in the oil and gas industry who are involved with waterflood design and implementation and the application of production enhancement technologies. Those with extensive theoretical and applied knowledge and interests in the following disciplines:

- Reservoir Engineering and Modeling
- Produced Fluid Chemistry
- Chemistry and Materials Science of Well Treatment Fluids
- Economics of Field Development
- Well Performance Evaluation

Applicants are encouraged to submit their own case histories and experiences for discussion.

[www.spe.org/workshops](http://www.spe.org/workshops)

## Upcoming Workshops and Conferences/Forums

17-18 June	<b>Horizontal Well Stimulation</b> <i>Petroleum Club – Midland, TX</i>
July 2008	<b>Development of a YP - From Apprentice to Decision Maker</b> <i>Houston, TX</i>
11-12 August	<b>Intelligent Completions</b> <i>Hyatt Regency Hill Country – San Antonio, TX</i>
26-27 Aug	<b>SPE/SEG/AAPG Joint Workshop - Applied 4D Seismic: Reservoir Monitoring, Model Updating, and Management</b> <i>San Luis Resort – Galveston, TX</i>

## Preliminary Technical Agenda

### Tuesday, November 17 2009

#### SESSION 1: Reservoir Modeling

*Session Managers: Mars Khasanov, Timur Manapov*

Description of the waterflooding process by geological and mathematical modeling is an important task from the point of view of forecasting of reservoir behavior during displacement of oil by water. Modeling allows for selection of optimum Water Flooding system (location of injection wells, operation modes, injection control methods) ensuring the most efficient development of reservoir and enhanced oil recovery. Participants of the session share experience of application of modeling for addressing Water Flooding optimization tasks in practice. The following main issues on the agenda of the session are:

- Completeness and quality of input information for development and updating of models
- Problems of adaptation of models to development background
- Modeling of Water Flooding for complicated reservoirs
- Role and place of different classes of models in Water Flooding management
- Generalization of results of analyses of processes and Water Flooding systems using models (common regularities and dependences on formation types)
- New and emerging Water Flooding modeling technologies

#### SESSION 2: Reservoir Surveillance

*Session Managers: Jean-Mark Genkin*

Reservoir Data acquisition is key to the overall optimisation process. From one side water production and injection represent costs that Operators want to minimize whilst maximizing oil production and reserves. From another side, timely understanding of remaining oil provides opportunities to better target additional activities to move more oil into producer wells. This session will therefore focus on case studies of successful surveillance/monitoring programs that have increased oil production and minimized water production. The goal is to share experience in techniques and methods of understanding areal and vertical (between reservoir layers) distribution of production and injection.

#### SESSION 3: Waterflood Engineering

*Session Managers: Alexander Shandrygin, Stanislav Zhdanov*

Engineering aspects of water flooding management are very important from the point of view of improvement of hydrocarbon field development effectiveness. The technological decisions for water flooding of reservoir made during Field Development Plan preparation and following field development dramatically influence on current and cumulative hydrocarbons production and recovery coefficient. Water flooding management is not a simple task because of the very complex processes taking place in formations during displacement hydrocarbons by injected water in case of artificial water flooding or formation water in case of natural water drive regime. For that, reservoir engineers have although numerous but rather limited methods of water flooding management. On this session, some of the main technologies that will be considered are:

- Water flooding system and wells pattern optimization
- Water flooding management by adjustment of well operation parameters
- Can horizontal and multilateral producers and injectors be considered as technologies for the increase of water flooding effectiveness
- Methods of sweep efficiency improvement without chemical agents injection.

### Wednesday, November 18 2009

#### SESSION 4: Problem Identification

*Session Managers: Philippe Enkababian, Oleg Pichugin*

Title: Water Control Problem Identification and Selection of Solutions  
Water shut off can be accomplished using a variety of different chemical solutions and mechanical devices. Choosing the specific technique primarily based on accurate diagnostic and well specific technical considerations is key to the success of conformance control. The discussions in this session focus attention on:

- Mechanism of Excessive Water Production (Problem types).
- Source of Excessive Water Inflow (Evidence, Correlation and Verification).
- Available and newly developed diagnostic methods and tools.

#### SESSION 5 AND 6: Injectors and Producers

*Session Managers: Igor Kuvshinov, Gregory Malishev*

“Wells are major sources of knowledge on reservoir properties and saturating fluids. Being a product of the field development model, wells are different in purpose and design. Well pattern in turn influences water injection patterns and methods of reaching fluid flow conformance in reservoir. Formation and near bottom-hole zone stimulation techniques evolve as flooding fluid front propagates. Although water injection and reservoir fluid recovery have similar in purposes, they still have a number of differences. Differences are stipulated by the displacement mechanism as well as the targets to achieve by various techniques of well intervention.

A Wide range of typical discussion topics will be covered:

- water control while stimulating;
- using formation isolation methods for reservoirs with complex geological structure, in particular, the active bottom/marginal water, undersaturated deposits, hydrophilic/hydrophobic reservoir, etc.;
- a prediction of wells productivity after performing operations to control the fluid influx;
- planning and practice of well bottom-hole construction reckoning for the control of water influx at later stages of wells operation;
- integrated work for changing the fluids injection and recovery conditions in separate areas of the field.

#### POSTER SESSION

*Session Manager: Alexander Batrashkin*

### Thursday, November 19 2009

#### CASE STUDIES AND ECONOMICAL ASPECTS

*Session managers: Jean-Mark Genkin, Timur Manapov, Don Wolcott*

Everywhere in the world, Mature waterflood Operations requires high a degree of operational excellence. In a Russian environment, additional challenges to field developments are added by a combination of low profit margins (due to high transportation costs and fiscal regime) and high degree of regulatory control. The latter may reduce the Operator flexibility in optimizing its cost base. This session will primarily cover real case studies of mature oil fields that have succeeded in maintaining their economic viability at high water-cut through innovative water-flood management. Focus will be in capturing the learnings for new developments, especially in terms of what could be optimised if the flood would be started over again.

## Workshop Timetable

### Tuesday, 17 November 2009

0830–0900	<b>SPE Registration, Coffee</b>
0900–0930	<b>Opening Session</b>
0930–1030	<b>SESSION 1:</b> Reservoir modeling
1030–1045	<b>Coffee Break</b>
1045–1200	<b>SESSION 1:</b> Reservoir modeling
1200–1300	<b>Lunch</b>
1300–1430	<b>SESSION 2:</b> Reservoir surveillance
1430–1500	<b>Coffee Break</b>
1500–1630	<b>SESSION 3:</b> Waterflood Engineering

### Wednesday, 18 November 2009

0815–0830	<b>Coffee Break</b>
0830–1000	<b>SESSION 4:</b> Problem Identification
1000–1030	<b>Coffee Break</b>
1030–1200	<b>SESSION 5:</b> Injectors
1200–1300	<b>Lunch</b>
1300–1500	<b>SESSION 6:</b> Producers
1500–1530	<b>Coffee Break</b>
1530–1630	<b>POSTER SESSION</b>

### Thursday, 19 November 2009

0815–0830	<b>Coffee Break</b>
0830–1000	<b>CASE STUDIES</b>
1000–1030	<b>Coffee Break</b>
1030–1200	<b>CASE STUDIES AND ECONOMIC ASPECTS</b>
1200–1300	<b>Lunch</b>
1300–1500	<b>GROUP PRESENTATIONS AND DISCUSSION</b>
1500–1530	<b>Workshop Closes</b>

#### Workshop guidelines

##### FORMAT

The workshop will consist of 3 days of informal sessions, with a number of short presentations and discussions per session.

##### ATTENDANCE

Attendance will be limited to a maximum of 80 delegates with proven experience and/or knowledge of the subject areas being covered.

##### SCRIBE'S REPORT

The steering committee will appoint a scribe to make a full report of the workshop, summarizing all presentations and discussion. This report will be circulated to all attendees. The copyright of the scribe's report will belong to SPE.

##### ATTENDANCE CERTIFICATE

All attendees will receive a certificate from SPE attesting to their participation.

##### CONTINUING EDUCATION UNITS

The workshop qualifies for SPE Continuing Education Units (CEUs), at the rate of 0.1 CEU per hour of attendance at the workshop.

##### COST AND RESIDENCY INFORMATION

Attendance at the workshop is non-residential. The attendance fee is GBP 385 for SPE members and GBP 405 for non-members and includes all workshop sessions, printed materials and the scribe's report, lunches; coffee breaks.

##### CANCELLATION POLICY

Written notice received 30 days before the starting date of the workshop entitles registrants to a 50% refund. There will be no refund for cancellations received after this time.

##### PLEASE USE FORM ON BACK FOR REGISTRATION

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