

## PRACTICAL RESERVOIR MANAGEMENT AND SURVEILLANCE TECHNIQUES FOR OIL PRIMARY RECOVERY PROJECTS

### Workshop Description

Primary production schemes for oil development generally result in recoverable reserves in the range of 10 to 30%. Meeting the recovery target forecast at the time of project development requires the implementation of a reservoir management plan that includes project surveillance at all levels (well, pattern, producing horizon, area, and field), both surface and subsurface. Reserves additions via new discoveries have been declining steadily in the last decades, and the increase of recovery factors from mature oilfields in known basins will be critical to meeting growing market demand. An increase in recovery factors above the initial forecasts may be achieved through the use of new tools and techniques, in combination with good surveillance. A continued focus on reservoir management and surveillance is required to meet and exceed the booked reserve volumes for waterfloods in fully developed and mature fields. This workshop will provide participants the opportunity to review and learn the elements of comprehensive reservoir surveillance to achieve these objectives.

In conducting this workshop, the instructors plan to:

- (1) Spend most of the time discussing the practical aspects of project management and surveillance,
- (2) Discuss the impact of reservoir management and surveillance on the project economics, and
- (3) Provide each course attendee a workbook containing copies of the instructors' PowerPoint presentations

### WORKSHOP CONTENT

Reservoir Management

Surveillance

Philosophy

Methodology

Critical Needs

Desired Accuracy

Necessity of Field Measurements and Options

Critical Aspects to Monitor in Wells and Facilities

Maximizing Utilization of Conventional Methods

Reliability and Frequency of Measurements & Sampling

Data Management & Processing

Ease of Interpretations and Usage

Value of Information

Cost Effective Options

Monitoring during Primary Production of Oil Reservoirs

Development of a Reservoir Model

Productivity Monitoring, PLT and Productivity Index

Impact of Commingled Production on Reservoir Management

Reservoir Management during Pressure Depletion

Tracking Pressure and Saturation Depletion and Fluid Movement

Static and Dynamic Pressure Testing

Tests for Inter-Well Communications

Performance of Down-Hole and Surface Equipment

Using Surveillance Analysis to Optimize Recovery

Revitalization of Mature fields

Integrating Information in Geological and Reservoir Models

Case Histories

## Duration and Scope

This is a three (3) day high-level workshop which focuses on reservoir management and surveillance techniques during primary recovery of oil. An entire day is devoted to discuss basics of reservoir management and surveillance including the philosophy and methodology of surveillance, and critical aspects of well and facilities monitoring. This is followed by an in-depth presentation of techniques for the surveillance and optimization of oil primary recovery operations. Case histories are included to facilitate the understanding of aspects involved in monitoring these projects. The workshop also includes guidelines for the integration of surveillance data into geological and reservoir models, and discussion about the latest developments in surveillance technology. Several practical classroom problems are included for the workshop attendees to make this a hands-on workshop.

## Who Should Attend

This workshop is custom-designed for petroleum engineers, reservoir engineers, production engineers, facilities engineers, managers, and other professionals involved or interested in practical reservoir surveillance and management techniques for improving recovery in primary production of oil.

## Workshop Requirements

Each workshop attendee (student) should bring their own notebook computer to work on the class problems. Class room should be equipped with power strips, for students to plug in their notebook computers, and a projector for instructors to project their PowerPoint slides.

## Workshop Manual

Each workshop attendee will be provided a workbook containing copies of the instructors' PowerPoint presentations, and solutions to the class problems.

## Workshop Instructors

This custom designed workshop will be conducted by our high-level and seasoned consultants, with extensive knowledge and experience in the subject matter as well as in conducting training programs around the world.

## Language of Instructions

This workshop will be conducted in the English language. However, if desired by the client, one of our bi-lingual consultants can be present throughout the workshop for the benefit of those attendees who are not fluent in the English language. This workshop can be customized further to meet the needs of the client's professionals and managers.