

PRACTICAL ENGINEERING ASPECTS OF CO₂ INJECTION FOR EOR AND GEOSEQUESTRATION

Workshop Description

It is well known that primary and secondary production schemes generally result between 40 to 50% recoverable reserves. 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.

This workshop will provide participants the opportunity to review and learn the most up-to-date information available about CO₂ Enhanced Oil Recovery (EOR) technologies and strategies practiced today, as well as CO₂ injection pilot testing, and CO₂ Geosequestration, a topic of growing interest to engineers around the world.

This workshop is based on the Society of Petroleum Engineers (SPE) popular courses on “Practical Aspects of CO₂ Flooding” and “Geological Sequestration of CO₂” that our high-level and seasoned consultants, along with other CO₂ EOR industry veterans, conduct around the world. This workshop can be customized further to meet the needs of our clients.

Duration and Scope

This high-level workshop is of five (5) days duration and it involves a discussion of the state-of-the-art of revitalizing mature oilfields, currently under primary and/or secondary recovery operations, using CO₂ Enhanced Oil Recovery (EOR) technologies and strategies. Several hours are devoted to discussion of CO₂ injection pilot-testing, and there are several class problems for the attendees to work on.

WORKSHOP CONTENT

- CO₂ Flood Design and Factors Influencing Successful Design
- CO₂ Minimum Miscibility Pressure (MMP) Correlation
- CO₂ Recovery Mechanism (Small Scale Reservoir Mixing)
- Mixing Zone Length
- Solvent Relative Permeability
- Immiscible CO₂, WAG Injectivity
- Scoping Predictions and Screening Criteria for CO₂ Flooding
- CO₂ Flood Design with Reservoir Simulation
- CO₂ Pilot Design (oil-in-tank pilot, CO₂ Injection, Logging pilots)
- CO₂ Huff ‘n’ Puff (Case Histories and Mechanism)
- Corrosion in CO₂ Floods
- Compression Facilities
- Pump Sizing for CO₂
- CO₂ Recovery Plant
- Safety in Handling CO₂
- Injection and Production Facilities Modifications for CO₂
- Separator Re-Sizing for CO₂ Flood
- Well Design and Lift Issues
- Operations
- CO₂ Flood Scoping
- Carbon Capture and Storage
- CO₂ Storage with Enhanced Hydrocarbon Recovery (EHR)
- CO₂ Trapping Mechanisms
- Reservoir Seals
- Wellbore Construction and Leakage Mechanism
- Monitoring and Verification of CO₂ Volumes
- Risk Assessment and Management

A detailed discussion of Carbon Capture and Storage (CCS)/ CO₂ Geosequestration, a topic of growing interest to engineers around the world, is also included in this workshop. A combination of technical discussions plus class room exercises will prepare the workshop participants to identify opportunities based on previous field experiences, lessons learned, and best practices that have been gathered purposely for this workshop.

Who Should Attend

This five (5) days workshop is custom-designed for senior managers, managers, senior engineers, and other professionals familiar with reservoir and production engineering, and interested in mastering CO₂ Enhanced Oil Recovery (EOR) technologies and strategies, and CO₂ injection pilot testing, and Carbon Capture and Storage (CCS)/ CO₂ Geosequestration.

Workshop Requirements

Each workshop attendee should bring their own notebook computer to work on the class problems. Class rooms should be equipped with power strips for attendees 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 (in English) containing copies of the instructors' presentation slides and solutions to the class problem.

Workshop Instructors

This custom designed workshop will be conducted by our high-level and seasoned CO₂ EOR 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.