Leaders Development Institute

Certified Courses

Integrated Reservoir Analysis

INTRODUCTION

- Understanding the reservoir performance is very crucial for a proper field development plan. Integrated approach should to be adopted to keep the production at the optimum level. Integration includes not only all available information but also considering all factors affecting on the overall reservoir behaviour.
- This premium quality training course aims to give the participants with a solid understanding on the integrated reservoir engineering analysis. The training course adopts an integrated approach to cover many fundamentals and conventional reservoir engineering aspects. The training course will extend to include a deep analysis on reservoir simulation and modelling features started from natural flow case and up to enhanced oil recovery modelling. Production optimization in addition to water & gas coning concepts are included especially with smart horizontal well technology.

Participants attending the Integrated Reservoir Analysis training seminar will develop their knowledge on the following key points:

- Fundamentals of reservoir Engineering
- Original hydrocarbon in place estimation
- Reserve evaluation and recovery factors
- Using conventional reservoir engineering with new infill wells
- Reservoir simulation and modelling analysis
- Enhanced oil recovery modelling analysis
- Field Development Plan concept
- Production optimization using Nodal Analysis
- Water and gas coning concept
- Different actual field case studies

PROGRAMME OBJECTIVES

- Gain better understand on the fundamental of reservoir engineering
- Be aware how to calculate the original hydrocarbon in place and reserve estimation
- Gain sufficient knowledge on reservoir simulation analysis
- Understand enhanced oil recovery modelling analysis
- Understand production optimization using Nodal Analysis Approach
- Gain better knowledge on water / gas coning analysis

WHO SHOULD ATTEND?

The Integrated Reservoir Analysis training course is suitable for:

- Reservoir Engineers
- Simulation Engineers
- Petroleum Engineers
- Field / Production Engineers
- Facilities / Process Engineers
- Team Leader / Managers
- Development / Exploitation Engineers
- Those seeking to have more knowledge on the integrated reservoir analysis

TRAINING METHODOLOGY

- Integrated Reservoir Analysis training course will combine technical presentations, extensive discussion and different actual field case studies supported by video materials to ensure that all participants will be ready to use theirs new knowledge.

PROGRAMME SUMMARY

- The Integrated Reservoir Analysis training seminar adopts an easy approach to enhance the knowledge of all participants and bring them quickly to the concepts, methodology and importance of reservoir engineering analysis in the overall oil industry.

PROGRAM OUTLINE

Reservoir Engineering Fundamentals

- Reservoir Types
- Reservoir Drive Mechanisms
- Overall Reservoir Performance
- Overall Producing Well Performance
- Reservoir Life Cycle
- Reservoir Rock Properties
- Reserve Fluid Characterization

Initial Oil in Place / Reserve Analysis

- Volumetric Method
- Material Balance
- Decline Curve Analysis
- Reserve Estimation
- Recovery Factors

Identify New Infill Opportunity (Integrated Conventional Analysis)

- Normalized Production Bubble Maps
- Wells Completion Matrix
- Wells Correlation Panel
- Stick Plots
- Estimation of Initial Rates for new Infill Wells

Reservoir Simulation Integrated Analysis

- Reservoir Simulation Concept
- Reservoir Static Model
- Reservoir Dynamic Model
- Saturation Height Function

Conducting the Reservoir Simulation Study

- Steps to run the simulation model
- Define Reservoir Initial Conditions
- Basics of Production Data History Match
- Parameters used for History Match
- Case Study – Reservoir Simulation Field Case

Reservoir Simulation Integrated Analysis (Contd.)

- Steps to run Reservoir Simulation Forecast
- Prediction Scenarios

Enhanced Oil Recovery (EOR) Modelling Overview Analysis

- Preparing the Model for EOR
- Compositional Simulation Model
- Fluid Characterization / PVT Modelling
- EOR Simulation Modelling
- Case Study – Enhanced Oil Recovery Simulation

Production Optimization-Nodal Analysis

- Pressure Losses in Production System
- Nodal Analysis Concept
- Nodes of Production System
- Inflow Performance Curve
- Outflow Performance Curve
- Nodal Analysis Applications
- Water and Gas Coning
- Coning / Breakthrough Concept

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