



Wireline Formation Testing and Interpretation - WFT

COURSE

About the Course

Formation testing and sampling tools (FTs) with wireline and while-drilling are widely used in exploration/appraisal and reservoir development projects. Over the past two decades, modern tools, such as MDT, RCI, RDT, and FRT, have emerged to become as one of the critical formation evaluation means in drilling projects with high cost/risk and high reward environments. In recent years, FT tools while-drilling provide alternatives of formation testing at earlier timing, flexible operational sequences in complicated wellbores access to reservoirs. FT pressure data and fluid samples are acquired for predicting hydrocarbon resource sizes and accessing key development uncertainties. This course is designed to satisfy the interdisciplinary needs of geoscientists, petrophysicists, and reservoir engineers with an increasing use of FT data. Practical and hands-on exercises are worked in the class. In the ends, the participants are expected to apply the learned skills in maximizing chances of acquiring quality data with improved formation evaluation outcome certainty.

Target Audience

Geoscientists, petrophysicists, wellsite supervisors, reservoir engineers, and geodata technologists of multidisciplinary formation evaluation and development teams engaging in explorations, appraisals, and field development activities.

You Will Learn

Participants will learn how to:

- Apply formation testing and sampling: technologies, applications, and limitations
- Understand how FTs work; configure tool strings and design/ plan a test program
- Perform QA/QC pressures and sampling data in real-time
- Interpret pressure gradient data for fluid densities and contact levels
- Understand reservoir connectivity/continuity and compartmentalization
- Quantify uncertainties of data interpretation results
- Interpret graphical techniques (scatterplot, excess pressures, normalization)
- Design and interpret Mini-DST and VIT data

Course Content

- Why formation testing and sampling
- How FT tools work; measurement principles; test types; drawdown mobility; data quality QA/QC
- Pressure fluid gradient and contact level interpretation principles
- Graphical pressure interpretation techniques: scatter-plot for gradient, FWL, and compositional gradient; excess pressure plot for compartmentalization; normalization plot for depleted reservoir
- Multiple well pressure trends for reservoir compartmentalization, continuity, and extent
- Qualification and quantification of interpretation uncertainties
- Mud filtration phenomena dynamics; dynamic gradient; supercharging; wettability/capillary effects
- Optical property measurement of reservoir fluids and contamination control; sampling principles and fluid sample QA/QC procedures; in-situ fluid PVT analysis
- Permeability test; mini-DST and VIT; practical aspects of well productivity and deliverability potential estimates

Product Details

Categories: Upstream

Disciplines: Petrophysics

Levels: Specialized

Product Type: Course

Formats Available: In-Classroom

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