

Openhole Petrophysical Interpretation

The course deals with the evaluation and reconciliation of core and log data, and the integration of that data into static and dynamic reservoir models.

There are seven basic measurements made with open-hole logs and a fundamental understanding of these is essential to derive realistic reservoir properties such as net/gross, porosity and water saturation in reservoirs.

This involves the evaluation and reconciliation of core data, log data and geological interpretation as input to the static characterisation of the reservoir. This also involves the use of log data to gain an understanding of dynamic reservoir performance.

The course concentrates on the principles behind the various logging tools, their limitations and calibration against mudlogs and cores with a combination lectures, individual and group exercises, open discussion and debrief sessions.

COURSE CONTENT

Logging Systems and Define the Reservoir

- Introduction to Petrophysics
- Logging Systems and Environment
- Gamma Ray and SP

Pore Systems and Acoustics

- Theory of Pore Systems
- Density and Neutron Logs
- Core Acquisition and Routine Analysis
- Sonic/Acoustic Tools

Saturation and Fluid Distribution

- Resistivity Logging
- Saturation from Logs
- Special Core Analysis
- Fluid Distribution and Saturation Height
- Pressures and Sampling NMR/CMR Tools

Log Interpretation

- The seven basic log measurements and their principles – recap
- The three basic equations – converting logs to reservoir properties
- Distinguishing between rock and fluid effects
- Data resolution – logs always simplify the geology
- Calibration with core – overcoming resolution limitations
- Core Analysis overview
- Geological interpretation from logs
- Interpreting production performance from logs

Duration

Full day

3 to 5 days

Learning Level

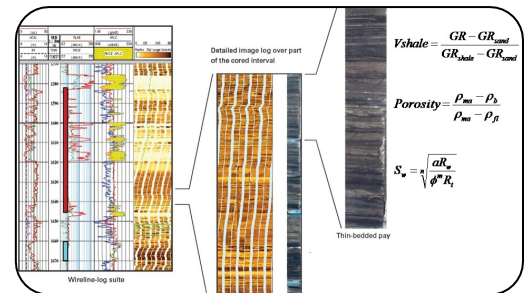
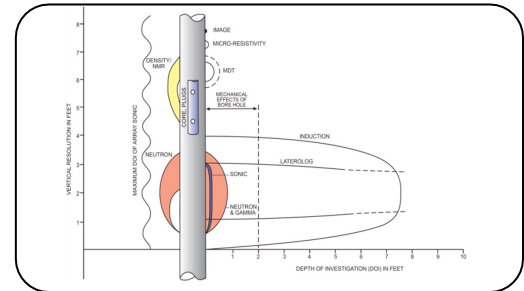
Skills ●○○

Knowledge ●●○

Awareness ●●●

Designed for:

The course is designed for petrophysicists and staff working in reservoir engineering, geology and geophysicists and other disciplines which interface with petrophysicists in their daily work.



Course Tutors



Mark Bramwell BSc, PhD
35+ years - geoscience
Mark runs courses in the Reservoir, Early Development, E&P Overview and Open Air Series. He has a career background at Shell, KUFPEC, AGR and TRACS. Mark is programme manager for the Early Development and the E&P Overview Series.