Pore Pressure Measurement and Prediction

MODULE

About the Skill Module

Pore pressure is a critical parameter for geomechanical modeling, and its proper characterization has a great importance as will be discussed in this skill module.

Target Audience

Geoscientists, petrophysicists, completion and drilling engineers or anyone involved in unconventional reservoir development

You Will Learn

Participants will learn how to:

- Identify the significance of pore pressure in subsurface operations such as drilling, completion, production, etc.
- Define pore pressure in porous rock and describe the mechanical interaction between the rock matrix and fluid and explain the concept of effective stresses
- List different pore pressure regimes and explain their differences
- Recognize and explain different mechanisms that result in overpressure regimes including stress-induced, uplift, buoyancy and pressure difference, and fluid generation and fluid expansion mechanisms
- Identify and describe natural and artificial mechanisms that result in underpressure regimes
- List different methods used for pressure detection and prediction including pre-drilling, while-drilling and after-drilling methods
- Describe the fundamentals of pore pressure measurement using well testing
- Recognize the influence of pore pressure on different rock properties, petrophysical logs and seismic attributes that can be implemented for identifying overpressuring
- Explain the influence of high pore pressure on different rock properties such as porosity, density, wave velocities, and resistivity
- Explain basic equivalent depth and ratio methods to estimate overpressuring from petrophysical logs
- Explain how drilling indicators (e.g., kicks, tight spots, gas shows, etc.), rock cavings and drilling rate are used for estimation of pore pressure
- Explain the challenges of pore pressure prediction in unconventional plays

Product Details

Categories: Upstream

Disciplines: Petrophysics Unconventional Resources

Levels: Basic

Product Type: Individual Skill Module

Format: On-Demand

Duration: 3.5 hours (approx.)

$395.00