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Shale & Carbonate Diagenesis in Reservoir Analysis

COURSE OVERVIEW

This course provides a comprehensive examination of the diagenetic processes that fundamentally control the quality and heterogeneity of shale and carbonate reservoir systems. Unlike conventional sandstone reservoirs, shales and carbonates are exceptionally reactive after deposition, undergoing profound physical and chemical alterations that can create, enhance, or completely destroy reservoir potential. Participants will learn to integrate geological principles with petrophysical data to predict pore network evolution, fluid flow behaviour, and ultimately, hydrocarbon recovery.

WHO SHOULD ATTEND?

This course is designed for geoscientists, reservoir engineers, Petro physicists, and professionals involved in exploration and production who want to deepen their understanding of diagenesis and its implications for reservoir quality. It is also beneficial for early-career researchers, and technical managers seeking to bridge the gap between academic knowledge and practical industry applications in shale and carbonate systems.

COURSE OUTCOMES

Delegates will gain the skills and knowledge to:

- Develop a clear understanding of the diagenetic processes affecting shale and carbonate reservoirs.
- Analyze the impact of diagenesis on reservoir quality, hydrocarbon potential, and production performance.
- Interpret diagenetic features using core, thin sections, geochemical data, and petrophysical logs.
- Integrate diagenetic concepts into reservoir characterization and modeling workflows.
- Apply case-based learning to solve practical reservoir evaluation challenges.

KEY COURSE HIGHLIGHTS

At the end of the course, you will understand;

- How to characterize carbonate and shale rocks through sedimentological and sequence stratigraphic evaluation.
- Identification and interpretation of diagenetic processes and their impact on reservoir quality.
- Analytical techniques such as cathodoluminescence, scanning electron microscopy, and geochemical analysis for diagenetic study.
- Evaluation of pore system evolution and its relation to sedimentology and diagenesis in reservoirs.
- Methods to predict reservoir heterogeneity and quality from depositional and diagenetic controls.
- Application of diagenetic knowledge to identify “sweet spots” and improve exploration and production models.

All our courses are dual-certificate courses. At the end of the training, the delegates will receive two certificates.
1. A GTC end-of-course certificate
2. Continuing Professional Development (CPD) Certificate of completion with earned credits awarded