![MERCURY]

Reservoir Fluid and Rock Analysis: Properties and Characterization

15 - 19 Jul 2024
Lisbon (Portugal)

Reservoir Fluid and Rock Analysis: Properties and Characterization

Ref.: 15127_311246 **Date:** 15 - 19 Jul 2024 **Location:** Lisbon (Portugal) **Fees:** 5200 **Euro**

Introduction:

This reservoir fluid and rock analysis course will help participants define reservoir fluid properties with increased confidence. It will comprehensively cover profiling the chemical properties of hydrocarbons, conventional laboratory PVT Volume Temperature tests, and quality control. Through the strategic process of reservoir fluid characterization, participants will confidently make evaluations and decisions relevant to fluid and rock properties within geosciences.

The reservoir fluid and rock analysis course will provide insight into reservoir characterization by practically integrating validated core analysis data with log and well data to predict rock properties for reservoir engineering calculations. Harnessing advanced rock and fluid analysis techniques will allow a more precise assessment of reservoir rock and its interaction with reservoir fluids.

Understanding the Properties, Characterization, and Analysis of Reservoir Fluids and Rocks:

This reservoir fluid and rock analysis course incorporates an in-depth understanding of rock and fluid analysis and the nuances of a rock reservoir. Its purpose is to elucidate the complexities and multifaceted aspects of reservoir rock and fluid analysis.

Participants will gain comprehensive knowledge of reservoir fluid types, delve into the fundamental query of what reservoir fluid is, and explore the critical reservoir fluid properties. The reservoir fluid and rock analysis course will culminate in an insightful reservoir fluid characterization.

Targeted Groups:

- Reservoir and Production Engineers.
- Geologists and Petrophysicists.
- Reservoir Engineers and Geophysicists.
- Petroleum Engineers and Geochemists.
- Researchers and Academics in Earth Sciences.
- Oil and Gas Industry Professionals.
- Students in Petroleum Engineering, Geology, or related fields.

Course Objectives:

At the end of this reservoir fluid and rock analysis course, the participants will be able to:

- Understand Reservoir Fluids and Their Phase Behaviour.
- Define Properties for different types of Reservoir Fluids.
- Understand Reservoir Fluid Sampling Methods and Tools.
- Define the Different Types of Reservoir Rock Properties and Their Measurements.
- Integrate the Results of Core Data From Different Sources for Reservoir Engineering Calculations.

Targeted Competencies:

At the end of this reservoir fluid and rock analysis training, the target competencies will be able to:

- Understand reservoir fluid composition.
- Proficiency in rock properties analysis.
- Know fluid phase behavior.
- Master core analysis techniques.
- Skills in reservoir characterization methods.
- Competence in interpreting oil and gas well log data.
- Ability to assess reservoir quality and heterogeneity.
- Familiar with pore-scale modeling.
- Capability in conducting fluid flow simulations.
- Expertise in reservoir fluid sampling and analysis.

Course Content:

Unit 1: Reservoir Fluids and their Phase Behavior:

- Introduction.
- Components of Naturally Occurring Petroleum Fluids.
- Identifying Components - Single Components and SCN Fractions.
- Phase Behaviour - Pure Substances.
- Two-Component Mixtures, Three and Multi-component Mixtures.
- The Five Reservoir Fluids.
- Compositional Gradients.

Unit 2: Properties of Reservoir Fluids 1.00 Days:

- Real Gases.
- Properties of Dry Gases.
- Properties of Wet Gases.
- Properties of Black Oils.
- Retrograde Gases.
- Volatile Oils.

Unit 3: Reservoir Fluids Sampling and Analysis, PVT Reports and Application 1.00 Days:

- Reservoir Fluid Sampling Methods.
- Reservoir Fluid Sampling Tools.
- Well Conditioning.
- Application of Laboratory PVT Studies to Predict Reserves.

Unit 4: Introduction to Reservoir Core Analysis and Porosity Definitions and Measurements 1.00 Days:

- Core Analysis Application to Reservoir Exploitation and Management.
- Core Damage and Rock Property Alteration.
- Fluid Saturation and Wettability Alteration.
- Rock Textural and Mechanical Property Damage Clay Damage.
- Total and Effective Porosity Concepts and Models.
- Core Porosity Ambient and Overburden, Pore Volume Compressibility.
- Core and Log Porosity Reconciliation.

Unit 5: Permeability, Saturation, and Capillary Pressure Measurements 1.00 Days:

- Permeability and Water Saturation:
    - Core Permeability Measurements.
    - Well Test and Log Permeability Estimation.
    - Interrelationships and Scaling.
    - Water Saturation.
    - Direct Core Measurements.
    - Core and log Data Reconciliation.
- Relative Permeability:
    - Theory and Definitions Data Analysis Methods.
    - Laboratory Measurement Methods.
    - Factors Affecting Relative Permeability.
    - Data Averaging, Normalization, and Application.
- Capillary Pressures:
    - Factors Affecting Capillary Pressure Fluid Contacts.
    - Core Measurement Methods.
    - Capillary Pressure Data Correction Fitting and Averaging Functions.

Registration form on the :
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