MAESTRO CONSULTANTS

RESERVOIR CHARACTERIZATION

COURSE OUTLINE 2020

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TRAINING TITLE

RESERVOIR CHARACTERIZATION

VENUE

Dubai, UAE

DURATION

5 Days

DATES

22 - 26 November 2020

PRICE

US$4,000 per attendee including training material/handouts, morning/afternoon coffee breaks and Lunch buffet daily.

TRAINING INTRODUCTION

Reservoir characterization is a critical component to understanding the variety and causes of compartmentalization of structural or stratigraphically complex reservoirs. This 5-day course examines the various techniques for characterizing clastic reservoirs. Emphasis is placed on the variety of styles and causes of compartmentalization of reservoirs and associated development and production issues. Integrated characterization is emphasized. Topics include the measurement and analysis of static and dynamic reservoir properties, geologic controls on reservoir quality (porosity and permeability), flow unit characterization for upscaling, high-frequency sequence stratigraphy for characterization, styles of stratigraphic traps and compartments, structural compartmentalization, principles of geologic modeling for simulation and use of borehole image tools in the characterization of reservoirs. A case study approach is used throughout to explain the various topics. In-class exercises are completed to demonstrate and principles and techniques

TRAINING OBJECTIVES

- Understand the variety of clastic reservoir types and why they form different types of reservoirs.
- Achieve a general level of knowledge in recognizing the criteria (rock, log, seismic) which differentiate the variety of clastic reservoir rocks.
- Understand the controls on reservoir performance of these different heterogeneity.

- Learn the scales and types of heterogeneity that comprise clastic reservoirs
- Apply knowledge of clastic reservoir to reservoir management and well planning

TRAINING AUDIENCE

Geologists and geophysicists who are beginning involvement in reservoir characterization or who want to broaden their experiences beyond exploration; petroleum engineers who want to improve their understanding of the geologic aspects of oil and gas reservoirs.

TRAINING OUTLINE

DAY ONE

- FORMATION EVALUATION:
- Porosity & Permeability
- Rock characterization techniques
- Reservoir petrophysics and rock typing
- Universal permeability - porosity relationship, correlations
- core analysis
- Reservoir scales, averaging rock properties
- Turbulence factor as a rock characterization tool

DAY TWO

- FORMATION RESISTIVITY AND WATER SATURATION
- Formation water resistivity, chemical analysis
- Shale properties method, correlations
- Resistivity of shaly reservoirs
- Advances in Evaluation of shaly reservoirs
- Cementation factor in carbonate reservoirs

DAY THREE

- CHARACTERIZATION OF FLOW UNITS
- Reservoir zonation
- Flow units in clean sands, flow zone index
- Reservoir characterization by the J-function
- Log-derived evaluation of shaly sands
- Flow units in shaly formations, shale zone index

DAY FOUR

- NATURALLY FRACTURED RESERVOIRS
- Geological Vs Engineering Classification of Natural Fractures
- Indicators of Natural Fractures, Visual Identification of Fractures
- Fracture Porosity Determination
- Porosity Partitioning Coefficient, Fracture Intensity Index
- Permeability-Porosity Relationships
- Fracture Porosity and Aperture from Cores
- Fracture Area, Fracture Storage Capacity, Fracture Conductivity
- Analysis Procedure in Fractured reservoirs, Performance prediction
- Fracture Properties from Pressure Transient Analysis

DAY FIVE

- EFFECT OF STRESS ON RESERVOIR ROCK PROPERTIES
- Pore Compressibility, Effectiveness of Pore Pressure in Countering Stress
- Effect of Pore Compressibility in Reserves Calculations
- Converting Lab-data to Reservoir Data
- Effect of Stress on Porosity, Permeability and Resistivity
- Permeability-Porosity-Stress Relationships,
- Critical Pore Pressure, Critical borehole pressure in vertical wells
- Porosity as Strength Indicator to Evaluate Sand Production.

TRAINING CERTIFICATE

MAESTRO CONSULTANTS Certificate of Completion for delegates who attend and complete the training course

METHODOLOGY

Our courses are highly interactive, typically taking a case study approach that we have found to be an effective method of fostering discussions and transferring knowledge. Participants will learn by active participation during the program through the use of individual exercises, questionnaires, team exercises, training videos and discussions of "real life" issues in their organizations. The material has been designed to enable delegates to apply all of the material with immediate effect back in the workplace.