WELL LOG INTERPRETATION

RSE009

COURSE DESCRIPTION

The most universal, comprehensive, and concise descriptive documents on oil and gas wells are logs. They impact the work of almost every oilfield group from geologists to roustabouts to bankers. Familiarity with the purposes and optimum applications of well logs is, therefore, essential for people forging their careers in the oil business. Participants develop an appreciation for the constraints and limitations of operating in the borehole environment. A number of actual log examples are related to basic principles in the description of reservoir properties such as porosity, mineralogy, formation factor, saturation, and hydrocarbon type for essentially clean reservoirs. Cross-plotting and reconnaissance techniques quickly and efficiently discriminate between water, oil, and gas. Error minimization techniques, applicable only to computerized log analysis, produce optimal results. Participants gain realistic experience by working in teams on a comprehensive log interpretation exercise.

COURSE GOAL

To enhance the participants' knowledge, skills, and abilities necessary to understand the well-logging interpretation and to develop an appreciation for the constraints and limitations of operating in the borehole environment.

COURSE OBJECTIVES

By the end of this course, participant will be able to:

- Identify reservoirs.
- Determine mineralogy, porosity, and saturation in various lithogies.
- Recognize the importance of electrical properties of earth materials.
- Highlight oil mobility.
- Interpret pressure profiles.
- Develop optimum tools and logging programs.
- Apply quick-look methods of formation evaluation.

WHO SHOULD ATTEND

Petrophysicists, geologists, geophysicists, engineers, technicians, or anyone interested in a solid understanding of the principles of borehole geophysics.

COURSE DURATION

5 Working Days

COURSE OUTLINES

- Logging objectives.

- Invasion profile.

- Challenge of borehole geophysics.

- Passive electrical properties of earth materials.

- Resistivity measuring tools, normal, induction, laterolog.

- Reservoir/non-reservoir discrimination.

- Matrix-sensitivity logs, GR, SGR, Pe.

- Depth measurements and control.

- Borehole calipers.

- Porosity-mineralogy logs, density, neutron, sonic.

- Porosity determination in clean formations.

- Formation resistivity factor.

- Conductivity of shales.

- Porosity log crossplots and mineralogy identification.

- Partially saturated rock properties and Archie Equation.

- Linear movable oil plot.

- Reconnaissance techniques, Rwa, FR/FP, logarithmic scaler.

- Porosity-resistivity crossplots.

- Permeability relationships.

- Nuclear magnetic resonance.

- Use of pressure measurements.

- Computerized log evaluation.

- Sidewall coring.

- Recommended logging programs.