



## Production Logging - RMP

### COURSE

#### About the Course

Production logging refers to acquiring a suite of logging measurements in either production or injection wells to evaluate well or reservoir flow performance. Special purpose production logging tools can evaluate the well completion or look behind the pipe to evaluate the formation and its fluids in the near-well bore vicinity. Production logs are playing an increasing role in modern reservoir management by providing the only means of directly identifying downhole fluid movement.

This course will cover single-phase and multi-phase fluid flow in pipes, the theoretical bases of production logging techniques, production log interpretation, and operational considerations in acquiring production logs. Numerous field examples are used to illustrate the principles of production log interpretation.

This course is also available as a blended, online course

#### Target Audience

Petroleum and drilling engineers and managers, reservoir engineers, subsurface engineers, production engineers/technologists, petrophysicists, log analysts, and anyone interested in understanding production logs and cased-hole surveys.

#### You Will Learn

Participants will learn how to:

- Measure zonal inflows in producing wells using temperature measurements
- Measure multi-phase flow using temperature, spinner (flowmeter), and fluid holdup measurements
- Define injection profiles using temperature, radioactive tracer, and spinner (flowmeter) measurements
- Identify flow behind pipe with temperature, radioactive tracer, or noise logs
- Interpret cement bond logs and ultrasonic logs to determine cement quality
- Measure flow inside and outside casing with pulsed neutron tools
- Apply specialty tools (array holdup and spinners and pulsed neutron tools) for flow profiling in high angle/horizontal wells
- Confirm the location of some types of completion components using pulsed neutron measurements
- Design a logging program using the appropriate production logging services for well diagnosis and reservoir surveillance

## Course Content

- Wellbore environment and tool deployment considerations
- Depth control issues and natural gamma ray logging
- Cement bond logs
- Ultrasonic imaging logs
- Conventional temperature logs
- Conventional spinner (flowmeter) logs
- Conventional fluid holdup logs (gamma density, capacitance, differential-pressure)
- Radioactive tracer logs
- Noise logs
- Temperature from fiber optic cable
- Pulsed neutron capture logs (including oxygen activation and nonradioactive tracers)
- Pulsed neutron spectroscopy logs
- Array mini-spinner logs
- Array fluid holdup logs (optical, capacitance, and resistance)
- Multiphase flow and slip velocity
- Effects of hole-deviation on fluid holdup and multiphase flow velocities
- Combining production logs for multiphase flow profiling
- Combining production logs for injection well profiling
- Designing a production logging program for problem identification and solution

## Product Details

Categories: Upstream

Disciplines: Production and Completions Engineering Reservoir Engineering

Levels: Intermediate

Product Type: Course

Formats Available: In-Classroom

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