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COURSE BROCHURE

# Production Logging and Flow Profile Interpretation Training Course

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Registered in the United Kingdom and Saudi Arabia

# Production Logging and Flow Profile Interpretation Training Course

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Production Logging and Flow Profile Interpretation is a 1-week training course for production and petroleum engineers who must explain where each fluid enters a producing or injecting well, ending with a production log interpretation report. Ageing fields, rising water cut and costly interventions make zonal flow knowledge central to every workover and stimulation choice. Jupiter Prime Training runs this course for cased-hole flow interpretation.

## Why Production Logging and Flow Profile Interpretation Matters Now

Mature reservoirs now deliver much of the world's oil and gas, and in them water and gas breakthrough arrive zone by zone rather than all at once. Asset teams, intervention crews and reservoir modellers depend on knowing which perforations contribute and which have gone quiet. A well survey read correctly can turn a planned recompletion into a simple water shut-off; one read badly can isolate the wrong interval and lose reserves. The course rests on the physics of spinner response, wellbore heat transfer, hydrostatic gradients and holdup sensing.

## Who Gains Most from Production Logging and Flow Profile Interpretation

- Engineers responsible for diagnosing falling oil rates and rising water cut in producing wells
- Specialists who specify cased-hole tool strings and passes
- Engineers who choose between water shut-off, re-perforation and stimulation candidates
- Reservoir engineers who calibrate zonal allocation and history matches with measured inflow
- Injection engineers who verify where water or gas leaves the wellbore during pressure maintenance

Asset teams that bring their production, reservoir and well intervention engineers together gain most.

## Production Logging and Flow Profile Interpretation Capabilities

Participants turn raw passes of spinner, thermal, pressure and holdup curves into a defensible account of downhole inflow.

- Specify a survey design — the intervention engineer ordering the job
- Calculate zonal flow rates from multi-pass spinner calibration — the allocation decision for each perforated interval
- Assess temperature and pressure gradients for entry and leak signatures — the diagnosis of behind-casing flow
- Apply holdup and density readings to split oil, water and gas contributions — the water shut-off candidate list
- Test interpretations against surface rates — the reservoir engineer accepting the profile

- Communicate findings in a clear report — the asset leader approving a workover

## Key Production Logging and Flow Profile Interpretation Terms

- Spinner flowmeter — an impeller tool whose rotation rate gives the fluid velocity inside the casing.
- Holdup — the fraction of the pipe cross-section occupied by one phase at a given depth.
- Slippage velocity — the difference in speed between a light phase and a heavy phase moving upward together in the wellbore.
- Crossflow — movement of fluid from a higher-pressure zone into a lower-pressure zone through the wellbore, often seen during shut-in.
- Geothermal gradient — the natural rise of formation temperature with depth, used as the baseline for spotting entry and leak anomalies.
- Flow profile — the depth plot of how much of each fluid enters or leaves the well across every perforated interval.

## Production Logging and Flow Profile Interpretation Day by Day

### Day 1: Why Zonal Inflow Shapes Field Decisions

- Well Performance Symptoms — Which Wells Justify A Cased-Hole Survey
- Multiphase Flow Regimes In Pipe — Expected Tool Response By Deviation
- Tool String Configuration — Matching Sensors To The Diagnostic Question
- Survey Sequence Design — Flowing, Shut-In And Pass Speed Choices
- Depth Control And Correlation Logs — Confidence In Interval Placement

### Day 2: Velocity Measurement and Spinner Calibration

- Fullbore And Continuous Spinners — Tool Choice For Low And High Rates
- Multi-Pass Spinner Crossplots — Deriving In-Situ Fluid Velocity
- Threshold And Slope Effects — Correcting For Viscosity And Friction
- Velocity Profile Correction Factors — Converting Apparent To Average Velocity
- Zonal Rate Calculation — Splitting Total Flow Across Perforations

### Day 3: Thermal, Pressure and Fluid Identification Signals

- Temperature Log Signatures — Locating Gas Expansion And Liquid Entry
- Shut-In Warmback Surveys — Detecting Channels Behind Casing
- Pressure Gradient And Fluid Density — Identifying The Wellbore Mixture
- Capacitance And Optical Holdup Sensors — Measuring Water And Gas Fractions
- Noise And Sonic Listening Tools — Confirming Leaks And Tubing Flow

### Day 4: Diagnosing Crossflow, Water and Gas Entry

- Slip Velocity Correlations — Separating Phase Rates In Two-Phase Flow
- Water Entry Diagnosis — Coning, Channelling Or High-Permeability Streaks
- Gas Entry And Cusping Patterns — Choosing Squeeze Or Re-Perforation
- Shut-In Crossflow Identification — Pressure Support And Zonal Isolation
- Horizontal And Injector Profiles — Segregated Flow And Injection Conformance

## Day 5: Practising the Production Log Interpretation Report

- Integrated Quick-Look Interpretation — Combining Spinner, Thermal And Holdup Curves
- Reconciliation With Surface Rates — Accepting Or Rejecting The Profile
- Uncertainty Ranking Of Zonal Rates — Confidence Behind Each Recommendation
- Intervention Recommendation Matrix — Shut-Off, Stimulation Or Recompletion Choice
- Production Log Interpretation Report — Findings, Profile And Next Well Action

## Applying Production Logging and Flow Profile Interpretation After the Course

- Reinterpret one recent cased-hole survey with multi-pass spinner calibration and holdup splits.
- Draft a survey design for the next water shut-off candidate, stating station depths, pass speeds and the shut-in period needed to reveal crossflow.

## Production Logging and Flow Profile Interpretation Questions FAQ

### What is production logging and flow profile interpretation, and why does it matter now?

It is the measurement and reading of downhole flow to show where each fluid enters a well. With water cut rising in mature fields, it tells you which zone to shut off, stimulate or leave alone.

### Which roles gain most from production logging and flow profile interpretation?

Production, petroleum, reservoir and well intervention engineers gain most. You will use flow profiles to diagnose falling rates, rank workover candidates, calibrate zonal allocation and check injection conformance.

### How does production logging and flow profile interpretation differ from open-hole log analysis?

It reads moving fluids inside cased, producing wells rather than rock properties before completion. Open-hole analysis estimates porosity and saturation; this subject measures velocity, holdup and temperature to explain how a completed well actually flows.

### What will you bring back from production logging and flow profile interpretation?

You bring back a structured report of a worked survey: calibrated zonal rates, phase splits, a diagnosis of crossflow or unwanted entry, and a ranked intervention recommendation.

## Production Logging and Flow Profile Interpretation: The Way Forward

The production log interpretation report gives production and reservoir engineers a shared, depth-based account of inflow. Its first use is usually the go or no-go on a water shut-off or re-perforation. After that job, revisit the survey design itself, since shut-in period and pass speeds decide how clearly the next well reveals crossflow.