CONCEPT

Mature Field Management: Brownfield Rejuvenation, Infill Screening and Late-Life Economics

14 – 18 June 2027
Barcelona - Eixample district four-star



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Introduction:

Mature field management decides whether a declining oil or gas asset keeps paying for itself or slides early toward its economic limit, and many late-life fields leave bypassed oil, idle wellbores and surplus operating cost untouched because no one ranks them together. This Core Concept course takes engineers from decline diagnosis and surveillance review through bypassed oil mapping, infill and recompletion screening, workover and conformance candidates, late-life lift, facilities bottlenecks, cost reduction and cessation-of-production timing. Participants assemble a Mature Field Rejuvenation Opportunity Portfolio for a case field.

Course Objectives:

- Diagnose the decline mechanisms of a mature oil or gas field from rate, pressure, water cut and gas-oil ratio history and separate reservoir decline from well and facility constraints
- Locate bypassed and unswept oil by integrating surveillance logs, voidage balance, pressure maps and production allocation
- Screen infill drilling, sidetrack and recompletion targets and rank workover and remediation candidates by incremental reserves, risk and cost
- Select water and gas shut-off options and late-life artificial lift changes that match the diagnosed cause of excess fluid or lost drawdown
- Identify facilities bottlenecks, ageing asset integrity threats and operating cost reduction levers that restrict or erode field value
- Build late-life economics and a cessation-of-production decision case, and assemble a ranked rejuvenation opportunity portfolio

Target Audience:

- Engineers who forecast remaining reserves and plan reservoir management for fields past plateau
- Engineers who monitor well rates, water cut and gas-oil ratio and propose interventions on declining wells
- Engineers who plan and justify infill wells, sidetracks and recompletions in developed fields
- Engineers who plan and cost workovers, conformance treatments and lift changes on high water cut wells
- Engineers and analysts who own asset-level production targets, operating budgets and late-life plans

Course Outline:

Day 1: Mature Field Decline Diagnosis and Surveillance Data Review

- Mature Field Life Cycle: Plateau, Decline, Tail-End and Economic Limit
- Exponential, Hyperbolic and Harmonic Decline Curve Fits and Remaining Reserves
- Reservoir, Well and Facility Constraint Separation Using Loss Accounting
- Surveillance Data Audit: Well Tests, Allocation Factors and Pressure Surveys
- Water Cut, Gas-Oil Ratio and Productivity Index Trend Diagnostics

Day 2: Bypassed Oil Mapping and Infill and Recompletion Screening

- Voidage Replacement Ratio and Pattern Balance Review for Waterflooded Blocks
- Saturation Monitoring from Cased-Hole Pulsed Neutron and Time-Lapse Logs
- Remaining Oil Maps from Bubble Maps, Heterogeneity Index and Sweep Plots
- Infill Well and Sidetrack Target Screening with Drainage Radius Checks
- Behind-Pipe Pay and Recompletion Candidate Inventory

Day 3: Workover Candidate Ranking, Conformance Control and Late-Life Lift

- Well Candidate Selection Matrix for Workover and Downhole Remediation
- Water and Gas Coning, Channelling and Crossflow Diagnostic Plots
- Mechanical Isolation, Cement Squeeze and Gel Shut-Off Selection by Problem Type
- Late-Life Lift Switching: Gas Lift Reallocation, Pump Downsizing and Intermittent Production
- Idle and Shut-In Well Reactivation Review and Well Stock Health Index

Day 4: Facilities Debottlenecking, Ageing Asset Integrity and Late-Life Economics

- Water Handling and Compression Bottleneck Identification Across the Process Train
- Ageing Asset Integrity Threats: Corrosion, Obsolescence and Life Extension Reviews
- Operating Cost per Barrel Breakdown and Cost Reduction Levers
- Incremental Economics: Net Present Value, Unit Technical Cost and Well Kill Criteria
- Cessation-of-Production Decision Case and Decommissioning Liability Timing

Day 5: Case Study: Mature Field Rejuvenation Opportunity Portfolio

- Case Field Data Pack Walkthrough: Production History, Logs and Facility Limits
- Opportunity Register Build Across Reservoir, Well, Lift and Facility Levers
- Risked Incremental Reserves and Cost Ranking of Each Opportunity
- Portfolio Sequencing Against Rig, Budget and Facility Capacity Constraints
- Portfolio Presentation and Asset Team Challenge Panel

Skills You Will Gain:

- Decline Mechanism Diagnosis
- Surveillance Data Validation
- Remaining Oil Mapping
- Infill Target Screening
- Conformance Problem Diagnosis
- Late-Life Lift Adjustment
- Operating Cost Benchmarking
- Economic Limit Assessment

Why Attend This Course:

- Return with a Mature Field Rejuvenation Opportunity Portfolio that ranks reservoir, well, lift and facility opportunities for a case field by risked value
- Challenge decline forecasts and well kill decisions with loss accounting and constraint evidence rather than rate trends alone
- Recognise when excess water or gas is a near-wellbore problem that a shut-off can fix and when it reflects reservoir sweep
- Compare late-life practice with engineers from onshore and offshore assets, operators and service companies

Conclusion:

Mature field management adds value when decline is diagnosed, remaining oil is located and every reservoir, well, lift and facility lever is ranked on the same economic basis. The course moves from decline curves and surveillance audits to bypassed oil mapping, infill and recompletion screening, workover and conformance candidates, late-life lift, facility bottlenecks, ageing integrity, cost per barrel and cessation-of-production timing. The final day turns this work into a Mature Field Rejuvenation Opportunity Portfolio ready for asset team review.