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COURSE BROCHURE

Heavy Oil Production and Recovery Method Screening Training Course

24 – 28 October 2027
Doha

Heavy Oil Production and Recovery Method Screening Training Course

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Heavy Oil Production and Recovery Method Screening is a 1-week training course for production and reservoir engineers who must choose how viscous crude is mobilised, lifted and handled, and who leave with a heavy oil recovery method screening. Shrinking light-oil inventories and tighter emissions budgets push operators towards denser reservoirs. Jupiter Prime Training runs this course for engineers who need sound choices on such assets.

Why Heavy Oil Production Matters Now

Three pressures shape heavy oil work today: the growing share of viscous and extra-heavy resources in operator portfolios, the fuel and water demand of steam generation, and investor scrutiny of carbon intensity per barrel. An asset that matches its recovery method to viscosity, depth, net pay and rock quality can hold lifting cost and steam-oil ratio in check; one that copies a method from a different reservoir risks early steam breakthrough, sand failures and stranded wells. The course rests on published screening criteria for thermal and non-thermal methods and on the steam-oil ratio SOR as the common thermal yardstick.

Who Gains Most from Heavy Oil Production

- Engineers who forecast rates and select depletion strategies for viscous oil reservoirs
- Engineers who size pumps, heaters and diluent systems for wells producing dense crude
- Specialists responsible for sand exclusion, sand production limits and completion design
- Surveillance staff who track steam chambers, temperature logs and well response
- Facilities engineers who handle emulsions, dehydration and blending at the surface

Asset teams sending reservoir, lift and facilities engineers together gain most, because one screening decision touches all three.

Heavy Oil Production Capabilities

Participants move from crude viscosity and reservoir description to a defensible choice between cold flow, steam-based recovery and hybrid schemes.

- Assess viscosity, gravity and temperature sensitivity of a crude sample — mobility forecasts for development planning
- Weigh cold production with sand against thermal recovery — the asset's first development concept
- Calculate steam-oil ratio and heat losses for cyclic and continuous steam — fuel and water budgets
- Specify progressing cavity, rod or electric submersible pumps for viscous fluids — lift selection decisions
- Design sand control and surface treating for dense emulsions — completion and plant engineers
- Build a ranked screening matrix of recovery methods — the asset leadership's investment choice

Key Heavy Oil Production Terms

- Heavy oil — crude with low API gravity and high viscosity that flows poorly at reservoir temperature without assistance.
- Cold heavy oil production with sand CHOPS — deliberate sand inflow that creates wormholes and foamy oil flow to raise well rates.
- Cyclic steam stimulation — single-well cycles of steam injection, soaking and production that heat the near-wellbore region.
- Steam flooding — continuous steam injection through injector wells that drives heated oil towards separate producers.
- Steam-oil ratio SOR — volume of steam, as cold water equivalent, injected per volume of oil produced.
- Foamy oil — viscous crude holding dispersed gas bubbles after pressure drop, which improves primary recovery.

Heavy Oil Production Day by Day

Day 1: Viscous Crude and Reservoir Character

- API Gravity and Viscosity Measurement — Fluid Classification for Development
- Viscosity–Temperature Curves — Heating Requirement and Mobility Gain
- Unconsolidated Sand Properties — Completion and Sand Risk
- Resource Volumes and Net Pay Mapping — Target Interval Choice
- Asphaltene and Water Content Testing — Treating and Blending Needs

Day 2: Cold Production Methods

- Primary Depletion and Foamy Oil Behaviour — Expected Cold Recovery Factor
- CHOPS Wormhole Growth — Sand Tolerance and Well Spacing
- Horizontal and Multilateral Wells — Reservoir Contact Versus Drilling Cost
- Waterflooding Viscous Oil — Mobility Ratio and Breakthrough Risk
- Diluent Injection Downhole — Lift Efficiency and Blending Cost

Day 3: Thermal Recovery Methods

- Cyclic Steam Stimulation Design — Cycle Length and Soak Time
- Steam Flood Pattern Layout — Injector Count and Sweep
- Steam-Assisted Gravity Drainage Pairs — Thick Clean Sand Suitability
- Heat Loss and Steam Quality Estimates — Generator Sizing and Fuel
- In-Situ Combustion and Solvent Hybrids — Lower-Carbon Thermal Options

Day 4: Lifting, Sand Control and Surface Handling

- Progressing Cavity Pump Elastomer Selection — Temperature and Aromatics Limits
- Rod Pump and ESP for Viscous Fluids — Run Life and Power Use
- Slotted Liners and Wire-Wrapped Screens — Sand Exclusion Under Steam
- Emulsion Breaking and Dehydration — Export Specification Compliance
- Produced Water Recycling for Steam — Boiler Feed Quality

Day 5: Practising the Recovery Method Screening

- Screening Criteria Tables — Matching Fluid and Rock to Methods
- Analogue Field Comparison — Evidence for Shortlisted Methods
- Steam-Oil Ratio and Lift Cost Estimates — Ranking Economic Fit
- Carbon Intensity Per Barrel — Method Ranking Adjustment
- Heavy Oil Recovery Method Screening Matrix — Recommended Concept and Pilot

Applying Heavy Oil Production After the Course

- Rebuild viscosity–temperature curves for one producing reservoir and test whether cyclic steam or diluent lift would raise its rates.
- Run the screening criteria tables against a candidate block and present the ranked recovery methods to the subsurface lead.

Heavy Oil Production Questions FAQ

What is heavy oil production and why does it matter now?

Heavy oil production is the set of methods that mobilise, lift and treat viscous crude. It matters now because a growing share of remaining resources is heavy, while steam fuel, water and carbon intensity face closer scrutiny from owners and investors.

Which roles gain most from heavy oil production skills?

Reservoir, production and facilities engineers gain most. Each sees how its choices on recovery, lift or treating affect the other disciplines.

How does this heavy oil production course differ from a general enhanced oil recovery course?

It concentrates on viscous crude from first fluid sample to surface treating. A general enhanced oil recovery course spreads across gas, chemical and thermal methods for light oil, while this one adds cold flow with sand, viscous lifting and steam-specific facilities.

What do you bring back from heavy oil production training?

You bring back a ranked screening matrix for one asset. It compares cold, thermal and hybrid methods and points to the pilot that would test the leading option.

Heavy Oil Production: The Way Forward

The heavy oil recovery method screening first informs which development concept an asset carries into pilot design. Reservoir engineers maintain it, while production and facilities engineers use it to size pumps, screens and treating plant. After the first pilot results arrive, revisit the ranking with measured steam-oil ratio and sand rates rather than analogue values.