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COURSE BROCHURE

# Injection Well Performance and Formation Damage Remediation Training Course

22 – 26 March 2027
Munich

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Registered in the United Kingdom and Saudi Arabia

# Injection Well Performance and Formation Damage Remediation Training Course

**Ref:** 2819_108121 **Date:** 22 – 26 March 2027 **Location:** Munich **Fees:** 6200 GBP

Injection Well Performance and Formation Damage Remediation is a 1-week training course for reservoir and production engineers who keep injectors and producers delivering, and it ends with an injector upkeep and surveillance plan for one field. Pressure support now carries a growing share of mature-field output, so lost injectivity or plugged perforations quickly become lost barrels. The course is delivered by Jupiter Prime Training.

## Why Injection Well Performance and Formation Damage Remediation Matters Now

Three forces shape this subject today. Ageing waterfloods and produced water reinjection push poorer-quality water into the formation, raising plugging and scaling risk. Asset owners expect every injected barrel to support voidage replacement rather than leak into thief zones or fractures. An operator that reads injectivity decline early protects reserves and avoids costly workovers; one that reacts late faces pressure sink, early water breakthrough and wells shut in for acid jobs that miss the real damage mechanism.

## Who Gains Most from Injection Well Performance and Formation Damage Remediation

- Engineers responsible for injector performance, injection rates and voidage targets
- Engineers who design and evaluate matrix acidising and other stimulation treatments
- Specialists accountable for water quality, filtration and injection chemistry
- Surveillance staff who interpret pressure, rate and production logging data
- Well integrity engineers tracking annulus pressure and fracture containment

Asset teams gain most when reservoir, production and water treatment members attend together and agree one damage diagnosis per well.

## Injection Well Performance and Formation Damage Remediation Capabilities

Participants move from injectivity symptoms to a defensible damage mechanism and remediation choice.

- Diagnose injectivity decline from Hall plots and pressure falloff tests — injector intervention ranking
- Calculate skin components and separate mechanical from formation damage — stimulation candidate selection
- Specify injection water quality limits for solids, oil and oxygen — water treatment plant operators
- Design a matrix acid or solvent treatment matched to the damage mechanism — workover approval
- Assess fracture growth and conformance losses in injectors — reservoir pressure support strategy
- Build a surveillance schedule linking tests, logs and sampling — field operations and asset leadership

## Key Injection Well Performance and Formation Damage Remediation Terms

- Injectivity index — the injection rate achieved per unit of pressure above reservoir pressure, tracked to reveal plugging or stimulation gains.
- Skin factor — a dimensionless measure of extra pressure drop near the wellbore caused by damage, completion geometry or stimulation.
- Hall plot — a cumulative pressure versus cumulative injection chart whose slope changes flag plugging, fracturing or improving injectivity.
- Pressure falloff test — a shut-in test on an injector that yields permeability, skin and fracture half-length from pressure decline.
- Voidage replacement ratio — reservoir volume injected divided by reservoir volume produced, showing whether pressure support keeps pace.
- Fines migration — movement of loose clay and silt particles that bridge pore throats near the wellbore and reduce permeability.

## Injection Well Performance and Formation Damage Remediation Day by Day

### Day 1: Pressure Support and Injector Behaviour

- Voidage Replacement Accounting — Whether Injection Keeps Reservoir Pressure on Target
- Injectivity Index Trending — Early Warning of Plugging or Fracturing
- Injection Below and Above Fracture Pressure — Rate Limits Per Well
- Produced Water Reinjection Versus Seawater Supply — Source Water Choice
- Injector and Producer Pattern Response — Allocation of Injection Volumes

### Day 2: Damage Mechanisms Near the Wellbore

- Solids and Oil-in-Water Plugging — Filtration Cut-Off and Quality Limits
- Scale Deposition From Incompatible Waters — Inhibitor and Mixing Decisions
- Fines Migration and Clay Swelling — Rate and Salinity Limits
- Bacterial Souring and Biofilm Growth — Biocide and Treatment Frequency
- Drilling and Completion Fluid Invasion — Cleanup Before Injection Start

## Day 3: Surveillance and Diagnostic Methods

- Hall Plot Interpretation — Plugging, Fracture Growth or Thief Zone Entry
- Pressure Falloff Test Analysis — Skin and Fracture Half-Length Estimates
- Injection Profile and Temperature Logs — Zonal Conformance Verdict
- Core Flood and Water Sample Testing — Confirming the Damage Mechanism
- Skin Decomposition Into Mechanical and Formation Parts — Treatment Need

## Day 4: Remediation and Stimulation Choices

- Matrix Acidising Fluid Selection for Sandstone and Carbonate — Recipe Choice
- Solvent and Surfactant Soaks for Organic Deposits — Treatment Scope
- Diversion and Placement Techniques — Coverage of Damaged Intervals
- Backflow, Perforation Washing and Reperforation — Mechanical Cleanup Options
- Post-Treatment Evaluation Against Baseline Injectivity — Payback Judgement

## Day 5: Practising the Injector Upkeep and Surveillance Plan

- Field Case Diagnosis Using Hall and Falloff Results — Agreed Damage Cause
- Water Quality Target Setting for a Reinjection System — Plant Limits
- Stimulation Candidate Ranking Across a Well Stock — Workover Sequence
- Surveillance Frequency and Trigger Thresholds — Intervention Rules
- Injector Upkeep and Surveillance Plan Drafting — Asset Team Sign-Off

## Applying Injection Well Performance and Formation Damage Remediation After the Course

- Run Hall plots for every active injector and flag wells whose slope has risen since the last falloff test.
- Lead a damage review of the three worst injectors, matching water samples and skin estimates to one remediation choice each.

## Injection Well Performance and Formation Damage Remediation Questions FAQ

### What is Injection Well Performance and Formation Damage Remediation and why does it matter now?

It is the practice of keeping injectors and producers flowing by diagnosing near-wellbore damage and treating it correctly. It matters now because mature fields rely on pressure support and lost injectivity means lower recovery.

### Which roles gain most from Injection Well Performance and Formation Damage Remediation?

Reservoir, production and surveillance engineers gain most, with water treatment specialists.

## How does Injection Well Performance and Formation Damage Remediation differ from a general waterflood design course?

It works at the well and near-wellbore scale rather than the pattern scale. A waterflood design course chooses patterns and rates; this one explains why an individual injector loses injectivity and which cleanup or acid treatment restores it.

## What do you bring back from Injection Well Performance and Formation Damage Remediation?

You bring back an upkeep and surveillance plan for a well stock, with tests, water quality targets, triggers and ranked remediation candidates.

## Injection Well Performance and Formation Damage Remediation: The Way Forward

The injector upkeep and surveillance plan first informs which wells receive remediation in the next workover campaign. Reservoir engineers use it to defend voidage targets and operations staff use its triggers to request tests. After the first campaign, revisit the plan against post-treatment injectivity to confirm whether the diagnosed damage mechanism was the right one.