

Wellbore Treatments

5 days
Overview

COMP/TRAITE

LEVEL

Foundation

PURPOSE

This course provides knowledge and skills needed to examine well damage issues and take appropriate actions.

LEARNING OBJECTIVES

Upon completion of the course, participants will be able to:
identify the nature and the origins of well damage,
choose the adequate stimulation method,
learn how to deal with sand production and water coning.

WAYS AND MEANS

Animations - Exercises.
Visit of a rock mechanics and reservoir-wellbore interface laboratory.
Application to a real case (project) for the participants in the "Drilling & Completion Engineering" training course.

LEARNING ASSESSMENT

Quiz.

PREREQUISITES

No prerequisites for this course.

MORE INFO

Kindly refer to the following complementary courses which might be of interest: "Matrix Acidizing" and "Basic Hydraulic Fracturing".

Agenda

INTRODUCTION TO WELLBORE TREATMENTS

1 d

Fundamental reminders on Productivity Index (PI), the skin effect and flow efficiency, the different components of the skin.
Productivity issues: cause of low productivity, nature and origins of well damage, location of problems and possible solutions.
Damage due to fluids: mechanisms, prevention.

MATRIX TREATMENT: ACIDIZING...

1 d

Aims; how it works.
Carbonate rocks and sandstones; inner characteristics, reactivity to injected fluids.
Choosing the acids and the additives.
Choosing the wells to be treated.
Design: preparation, checks and guidelines during the operation, after the acidizing (flow back...), possible cause of failure, coiled tubing...

HYDRAULIC FRACTURING

1 d

Aims and principles; candidate wells.
Frac fluids and fracture propping.
Calculation models and frac impact on PI.
Design; program, frac evaluation.
Other cases: pre-frac, minifrac, acid frac.

SAND CONTROL

1 d

Basics: consequences of sand, prediction of sand, sand analysis.
Sand control techniques; case of mechanical processes (determining the gravel and the screens...).
Design: cased hole gravel packing, openhole gravel packing, preparing the gravel pack, various methods, guidelines.

WATER OR GAS SHUT-OFF & DEPOSITS

0.75 d

Origin of the problems.
Remedial.
Debate around several examples.
Case study.

KNOWLEDGE ASSESSMENT

0.25 d