Training - Geosteering

GEOST-EN-D | Distance only | 3 days

This course provides unique opportunity to independently support the geosteering of horizontal wells in the conditions of real-time drilling, using an interactive simulator

Level

Knowledge

Public

Geologists, reservoir engineers, drilling coordinators and supervisors, petrophysicists and geosteerers

Objectives

Attendees will be able to implement the following skills:

- gain knowledge of the fundamentals of telemetry, measurements and logging while drilling and directional drilling technologies
- become aware of the criteria for selecting the minimum required logging data set before a geo-steering job, and get acquainted with errors and uncertainties in the drilling of horizontal wells, related both to geol-ogy and to the limitations of telemetry and logging tools, and the methods of calculating the well trajectory
- master the modern geosteering methods and become familiar with the basics of interpreting azimuthal logs

Pedagogical & technical resources

- Geosteering requires practice, and this is inevitably associated with making mistakes and wrong decisions. The price of making a wrong decision on a real well can vary from a few hours of non-productive time to a million-dollar sidetrack or a million barrels of oil that can never be extracted. These factors make learning on a real horizontal well an extremely expensive training ground
- Participants will master the necessary knowledge to build a preliminary simulation and develop a strategy for drilling a horizontal well
- Using a unique interactive simulator, participants will independently follow the drilling of at least three horizontal wells, while learning how to independently make timely and technically correct trajectory corrections

Assessment of achievements

- Trainees are assessed throughout the training through practical application phases and interactions with the trainer
- A final on-the-spot evaluation may also be carried out at the end of the course and/or at the end of each module using tests designed to verify the learners' understanding and assimilation of the knowledge linked to the training objectives

Prerequisites

No prerequisites are necessary to follow this course

Responsable

IFP Training instructors, with expertise in the field and trained in modern teaching methods adapted to the specific needs of learners from the professional world

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Program

BASICS OF TELEMETRY, MEASUREMENT WHILE DRILLING (MWD) & DIRECTIONAL DRILLING TECHNOLOGIES — 0.25 day

Drilling technology with motor and RSS.
Logging and Measurements While Drilling (LWD/MWD).
Telemetry and surveys.
Errors and uncertainties while drilling.

GEOSTEERING USING NON-AZIMUTHAL DATA (THEORY) — 0.25 day

Method of matching synthetic curves with actual LWD.
Benefits and limitations of synthetic curves method.

PRACTICUM - PREPARATION OF PRE-JOB GEOSTEERING MODEL; GEOSTEERING OF WELL #1 IN REAL TIME — 0.5 day

Loading and analysis of initial data, choosing drilling strategies, risk analysis.
Geosteering of the training well #1 on the geosteering simulator in real time.
Making geosteering recommendations based on matching with trajectory adjustments.
Working with WITS and WITSML protocols.
Updating the 3D structural geological model based on geosteering results.
Presentation of the final geosteering model.

GEOSTEERING USING AZIMUTHAL DATA (THEORY)

Application of azimuthal data.
Application of borehole images.
"Zones of exclusion" and the error of the dips picked on the images.

PRACTICE - GEOSTEERING OF WELL #2 USING AZIMUTHAL DATA — 0.5 day

Geosteering of well #2 on the geosteering simulator.
Interpretation of the borehole images in real time.
Uncertainty analysis using azimuthal data.
Presentation of the final geosteering model.

GEOSTEERING WITH DISTANCE TO BOUNDARY TECHNOLOGIES (THEORY) — 0.5 day

Measurement principles of the distance to boundary technologies.
Ultra-deep reservoir mapping technologies.
Resistivity inversion in geosteering.

PRACTICE - GEOSTEERING OF WELL #3 — 0.5 day

Geosteering of well #3 in the geosteering simulator in a complex reservoir.

GEOSTEERING "DEBRIEFING" — 0.5 day

The major mistakes in geosteering.
Geosteering tips and tricks.

To French entities : IFP Training is referenced to DataDock ; you may contact your OPCO about potential funding.
Please contact our disabled persons referent to check the accessibility of this training program : referent.handicap@ifptraining.com

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