

# Training - Drilling fluids: mud and cementing school



DMCS-EN-P



Face-to-face only



30 days

This course provides the knowledge and skills needed to design & supervise drilling mud & cementing programs

## Level

Knowledge

## Public

Engineers, supervisors and lab professionals involved or interested in drilling fluids mud & cementing in water, geothermal or oil/gas drilling operations

## Objectives

Attendees will be able to implement the following skills:

- acquire a thorough knowledge of drilling fluids and rheology
- learn how to choose the right equipment for solid removal
- learn how to communicate efficiently as drilling fluid specialist
- master the vocabulary specific to cementing
- understand and use primary cementing techniques and procedures
- select cement and necessary additives
- calculate major parameters in a cementing operation
- assess the quality of a cementing job

## Pedagogical & technical resources

- Exercises, videos
- Application to a real case study
- Laboratory practices

## 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

## Responsible

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

## Program

## DRILLING MUD

### FUNCTIONS OF DRILLING FLUIDS

#### PHYSICAL & CHEMICAL CHARACTERISTICS

Specific gravity.  
Rheology.  
Filtration.  
Alkalinity.  
Chloride.  
Hardness.

#### TYPES OF FLUIDS

Water base mud.  
Oil base mud.

#### SHALE INHIBITION

Types of shale.  
Chemical and physical inhibition.

#### MECHANICAL & WASTE TREATMENT

Function.  
Selection of equipment and layout.  
Separation ranges.  
Overall efficiency.  
Waste treatment:

- Solidification.
- Reinjection.
- Desorption.

#### TROUBLESHOOTING

Losses:

- Detection.
- Analysis and decision chart.
- Treatment.

Hole cleaning:

- Vertical well.
- Deviated and horizontal wells.

#### DRILLING MUD PROJECT

Design of a whole well muds: Application to real case drilling & completion program.

## CEMENT

#### DRILLING MUD PROJECT

Cementing program.  
Job planning and preparation:

- Casing running.

- Selection of the fluids and flows.
- Cementing calculations.
- Primary, surface, multistage, liner cementing.
- Cement plugs.

## **CEMENT & SLURRIES**

Cement chemistry, cement with environmental impact reduction (CO<sub>2</sub>).  
Special slurries and additives.  
Formulation and laboratory tests.  
Rheology.  
Displacement in eccentric annulus.  
Salt zone and temperature problems.

## **SPECIAL CASES**

Gas zone cementing.  
Deviated and horizontal wells cementing.  
Remedial techniques.  
CO<sub>2</sub> environment (CO<sub>2</sub> resistant cement).

## **CEMENTING PROJECT**

Design of a whole well cementing job: Application to real case drilling & completion project.

## **EVALUATION OF THE CEMENTING JOB**

Principles and interpretation of the cement logs:

- Thermometry.
- Sonic (CBL - VDL).
- Ultrasonic (USIT).

Logs analysis on a real case

## **KNOWLEDGE ASSESSMENT**

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](mailto:referent.handicap@ifptraining.com)