



DRILLING, WELLS AND RESERVOIR ENGINEERING

HPHT Well Design and Drilling

5 day course

Classroom, online or in-house

Course overview

Above roughly 150 degrees Celsius and 10,000 psi at the reservoir, ordinary assumptions stop holding: mud density changes with temperature, elastomers fail, electronics die and trapped annular fluid can burst casing as the well heats up. Delegates work through the HPHT envelope and its consequences in sequence: temperature dependent fluid density and ECD, narrow margins, kick behaviour of gas dissolved in oil based mud, annular pressure build up and its mitigation, and casing and connection selection under thermal cycling. Wellhead and BOP ratings, elastomer and seal qualification, logging and MWD tool limits and cementing at high temperature follow. Well control adapted for HPHT, including fingerprinting and flow check discipline, closes the programme. Delegates leave able to identify HPHT design drivers and plan a well around them.

What you will learn

- Define the HPHT envelope and the design consequences of each boundary
- Calculate downhole mud density and ECD corrected for temperature and pressure
- Explain gas solubility in oil based mud and its effect on kick detection
- Assess annular pressure build up and select mitigation methods
- Select casing, connections and elastomers for thermal cycling
- Specify wellhead, BOP and downhole tool temperature and pressure ratings
- Design cement systems that remain stable at high temperature
- Adapt well control procedures through fingerprinting and flow check discipline

Who should attend

- Drilling engineers planning deep high pressure wells
- Well design and well integrity engineers
- Drilling superintendents and supervisors
- Completion engineers on HPHT projects
- Drilling contractor technical managers

Course outline

- 01 Defining HPHT and its design drivers
- 02 Temperature effects on fluids and ECD
- 03 Kicks in oil based mud at high temperature
- 04 Annular pressure build up
- 05 Casing, connections and thermal loads
- 06 Seals, elastomers and equipment ratings
- 07 High temperature cementing
- 08 Logging and MWD tool limits
- 09 HPHT well control practice

Upcoming dates



Dates	Venue	Format	Fee per delegate
16 to 20 November 2026	Windhoek, Namibia	Classroom	R19,950
28 December 2026 to 1 January 2027	Maputo, Mozambique	Classroom	USD 1,325
8 to 12 February 2027	Cape Town, South Africa	Classroom	R19,950
22 to 26 February 2027	Online	Online	R8,500

Fees and how to register

This 5 day course is **R8,500** per delegate online, **R19,950** in the classroom in South Africa, Botswana, Namibia, Lesotho and Eswatini, and **USD 1,325** in the classroom elsewhere in Africa. In-house training is quotation on request. Book 2 or more delegates on this course and save 10%.

To register or request an in-house proposal, visit www.afrisciencegroup.com, email info@afriScience.co.za, or WhatsApp us on **+27 63 479 1136**.

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