TETRA TECH RPS ENERGY | TRAINING

N743: Drillstring Design Practices

Instructor(s): Robello Samuel

Format and Duration

Classroom - 2 Days
Virtual - 4 Sessions

Summary

This course provides a comprehensive treatment of drillstring design and practices, grounded in theoretical principles. Participants will explore various operational loads and limits, gaining a more detailed understanding of drillstring mechanics. The curriculum also covers advanced drilling engineering, enabling participants to comprehend drillstring integrity under various operating load conditions.

Additionally, the course includes concepts related to bottom hole assembly (BHA) design, drillahead techniques, and drillstring dynamics. Participants will receive training on real-time monitoring and optimization, as well as predictive conditions relevant to well drilling.

Business Impact: Participants will gain the expertise to design and manage drillstrings that reduce failure rates, optimize weight transfer, and improve wellbore quality. This leads to safer, more efficient drilling operations, reduced downtime, and lower overall costs—contributing to better well delivery and enhanced drilling performance.

Learning Outcomes

Participants will learn to:

1. Provide procedures to enhance practical knowledge related to high-angle wells.
2. Synthesize the design principles for directional and horizontal wells.
3. Comprehend various trajectory models used in well construction.
4. Contextualize the application of various downhole tools in drilling operations.
5. Demonstrate the importance of well engineering in relation to high-angle wells.
6. Develop a broader understanding of the application of principles and methods in directional drilling.

Training Method

This is a classroom or virtual classroom course comprising a mixture of lectures, discussions, case studies, and practical exercises.

Who Should Attend

This course is designed for drilling engineers, well operations personnel, rig supervisors, drilling supervisors, and pipe manufacturers who seek to gain a deeper understanding of directional well designs and their applications in drilling high-angle wells.

Course Content

- Basics and mechanical properties and concepts
- Effective and True Tension concepts
- Wellbore Friction and Wellpath Challenges

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- Torque and drag models – soft, stiff, hybrid and dynamic
- Fatigue, buckling, stress and yield limits
- BHA selection
- Basics of Vibration and Drillstring Vibration and challenges
- Drillstring dynamics
- Tubular wear
- Failure prevention
- Comprehensive drillstring design