
Overview

This unit is about monitoring of the drilling process by gathering and evaluating information to assess the status of drilling operations. This unit deals with the following:

- 1 Maintain Drilling Parameters
- 2 Assess and Control The Status of Drilling Operations

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Performance criteria

- You must be able to:*
- P1 obtained and confirmed the **parameters** within which the drilling operations are to be conducted
 - P2 accurately determined the parameter levels that will be needed to maintain well control
 - P3 established and maintained drilling parameters at the levels needed for effective and safe operations
 - P4 promptly responded to deviations in parameters and feedback from hole monitoring data to maintain safe drilling
 - P5 recorded all relevant information at the required frequencies
 - P6 given clear directions and maintain effective communications with crew members throughout the drilling operation
 - P7 accurately interpreted the well control data obtained
 - P8 accurately determined the match between drilling status and expectations
 - P9 sought information and advice from relevant others in interpreting unclear and conflicting information
 - P10 accurately identified the possible causes of **deviations** between status and expectations
 - P11 provided a clear, realistic and safe analysis of the implications of the identified status for the drilling programme
 - P12 agreed remedial action with relevant parties
 - P13 monitored hole conditions to confirm the effectiveness of the course of action
 - P14 recorded clearly and accurately deviations between status and expectations and the remedial action taken
 - P15 worked safely in accordance with operational requirements and associated **Safe Systems of Work**

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Knowledge and understanding

You need to know and understand:

- K1 the layout and function of controls and information presented within the drillers dog house
- K2 how to read and interpret information on drilling parameters
- K3 the significance to the drilling process of the parameters of pump pressure; weight on bit; RPM; torque; rate of penetration
- K4 how to control the pump pressure; weight on bit; RPM; torque; rate of penetration
- K5 the likely factors and considerations that are necessary while drilling the top hole; intermediate holes; reservoirs; under balanced; HPHT
- K6 the likely factors and considerations necessary while drilling in clay; plastic shales; sloughing shales; salt; sand
- K7 what information can be interpreted from changes in the return of cuttings
- K8 what are the implications to the drilling process of changes in return of cuttings
- K9 how the potential for stuck pipe can be identified and the measures that can help prevent this how the drilling process is affected by deviations in pump pressure; weight on bit; cuttings returns; torque; rate of penetration
- K10 what immediate actions are necessary to assess deviations in the drilling parameters including pump pressure; weight on bit; cuttings returns; torque; rate of penetration
- K11 what reporting and recording requirements need to be followed
- K12 what terminology and units of measurements are used to reference drilling parameters and how these should be represented within documentation
- K13 what considerations are necessary when deviating from established drilling parameters to help reduce the potential for stuck pipe and what measures can be taken as a result of this
- K14 how to identify the formations to be encountered and when these are likely to be changed
- K15 how to identify the potential implications for drilling parameters of passing from one formation to another
- K16 what bearing can the performance of the equipment or systems (including bit; circulating system; rotary mechanism; shale shakers; drill strings; hoisting system breaks) have on maintaining drilling parameters

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Additional Information

Scope/range

The following terms in **bold** relate directly to those shown in **bold** in the Performance Statements.

- 1 **Parameters** must include those relating to RPM; pump pressure; rate of penetration; weight on bit
- 2 **Deviations** must include those relating to rate of penetration; cutting returns; torque; pump pressure
- 3 **Safe Systems of Work** must include processes or systems that incorporate Hazard Identification, Risk Assessment, Permit to Work and any other associated systems.

During this work you must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO YOU.

- 4 How to use 'Safe Systems of Work' processes to identify hazards and mitigate or reduce risks to as low as reasonably practicable (ALARP)
- 5 How to select, use and care for PPE (to include sight/hearing protection, coveralls, gloves, footwear, hard hats, respirators)
- 6 The implications of statutory (e.g. HASAWA and COSHH) and organisational requirements
- 7 How to interpret operational requirements (e.g. relevant policies, procedures, instructions, codes of practice, standards, schedules)

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