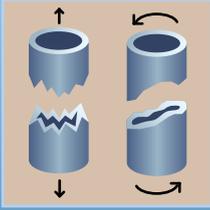


Drill Pipe Failure

🔍 Severe dogleg. High friction factor. Overload.

💡 Control dogleg severity. Control the mud pH. Inspect drill pipe.



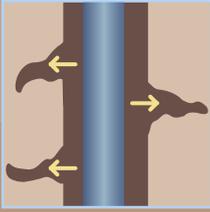
Common Drilling Problems

Causes and Solutions

Lost Circulation

🔍 Fractured or highly permeable formations and high downhole P.

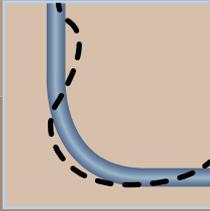
💡 Maintain proper downhole P. Perform LOT and FIT. Prepare LCM.



Hole Deviation

🔍 Heterogeneous formation/dip angle. Drill pipe and BHA makeup. Bit and WOB.

💡 Use MWD.



Pipe Sticking

🔍 Annular P. exceeds pore P. Pipe is embedded in the filter cake.

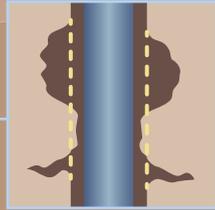
💡 Manage the mud properties including lubricity. Utilize OBM/SBM.



Borehole Instability

🔍 Earth stresses. Pore P. Rock properties. Drilling mud chemistry.

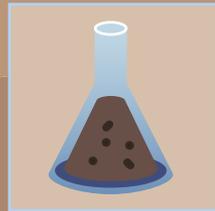
💡 Maintain proper mud weight and ECD. Keep mud compatible with the formation.



Mud Contamination

🔍 Overtreatment. Solid additives or drilled materials.

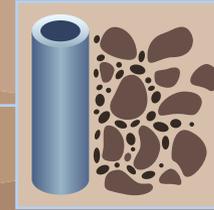
💡 Monitor mud properties. Schedule pretreatment and treatment.



Formation Damage

🔍 Solids plugging. Clay swelling. Emulsion blockage. Aqueous-filtrate blockage.

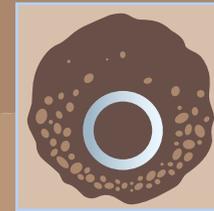
💡 Use drill-in/workover/completion fluids. Underbalance drilling.



Hole Cleaning

🔍 Low annular velocity. Hole inclination (45 – 50°). High ROP.

💡 Maintain annular velocity and viscosity. Rotate drill pipe. Use hi-vis sweeps.



🔍 Causes 💡 Solutions