Why pressure management is more challenging in deeper water

This range of pressures at Depth D is smaller, and thus harder for drillers to maintain, than the range at Depth D in the boreholes to left.

Lithostatic pressure

Hydrostatic pressure

Acceptable mud/borehole pressures

Some constant depth D

1 atm

1 atm

1 atm

1 atm

Sea level

Seafloor

This illustration was inspired by figures in Beyond Deep—The Challenges of Ultradeep Water by R. Cummings et al. in Schlumberger Oilfield Review, Winter 2014-2015, p. 34-45.