

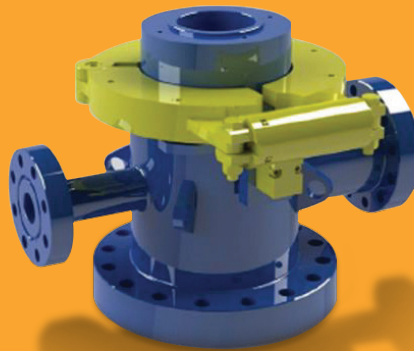


MANAGED PRESSURE DRILLING PERFORMANCE ANALYSIS

DATE:	2025
LOCATION:	Midland Basin
FORMATION:	Wolfcamp D
DEPTH:	19,400' MD / 10,500' horizontal
MPD:	Constant BHP
ASSITED IN:	Drilling, Mud Rollovers, Tripping, Casing Running

Using MPD to successfully drill the Wolfcamp D

Equipment Used:



RCD (Rotating Control Device)

OBJECTIVES:

- Drill 3 lateral sections in the Wolfcamp D formation
- Ensure wellbore stability
- Control pressure with constant BHP near pore pressure
- Reduce drilling cost by saving operational days and fluid weight reduction
- Minimize drilling fluid losses

KEY RESULTS:

- Drilled to target TD in all wells with avg 5 days ahead of schedule
- Total 16 days saved
- Drilled 3x horizontal laterals >10,000'
- Drilled with reduced mud weights
- Casing ran to TD in all wells
- No hole collapse or cavings
- Zero well control events
- Zero trips due to MPD issues
- Significant cost savings in days saved and fluid expense
- Proved MPD was the answer
- Introduced MPD to rig crew and improved understanding of methods and procedures



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CHALLENGES:

- Interbedded volcanic ash beds prone to cavings during pressure fluctuations or overpressure
- Formation breakdown and instability
- Lost Circulation
- Brake handle rig with crew unfamiliar with MPD methods
- High Torque & Drag
- Avoid mistakes of previous operators in the area who lost wells due to complications with pressure control

METHODS / STRATEGY / APPROACH:

- Constant Bottom Hole Pressure using MPD to hold SBP on connections and pumps off events
- Mud weight was reduced by 1.5 ppg from initial plan
- Hydraulic modeling and engineered parameters for drilling and tripping
- MPD specialists on tour with driller for familiarization and smooth operation
- Economical – simple – quick MPD rig up and equipment footprint
- Trip margin applied using SBP

All three wells were delivered ahead of schedule and met production targets. Only one unplanned trip occurred due to an MWD tool failure. Early indications of tight spots were promptly addressed, allowing casing to be run to total depth without any issues. Hole instability challenges associated with volcanic ash beds—which had hindered previous drilling campaigns—were effectively mitigated during this operation.

Piping and Instrumentation Diagram for the project

