

Drilling Tools

WedgeTail™ Roller Reamer

WedgeTail™ Roller Reamer improves drilling efficiency and enables longer runs in the Permian.

Customer Challenge:

A major E&P operator drilling in the Delaware Basin of West Texas was looking for a solution to increase efficiency in its drilling program and looked to **Reservoir Group to help them meet this challenge.** By gaining an understanding of their well plan, Reservoir Group worked with the operator to determine that efficiencies could be gained from eliminating torque and drill string vibration.

It was determined that the torque and vibration was a result of the stabilizers, which historically have been installed in almost every drill string worldwide to eliminate drill string instability.

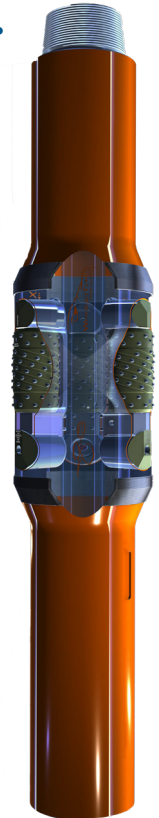
The Results:

All four wells were drilled at the same approximate depths, under very similar drilling factors and conditions. The wells were drilled in the 8-3/4" curve section. The data was retrieved from MWD measurements of lateral vibrations measured in G's (gravitational force). The data comparing the two technologies showed the following for the wells utilizing the WedgeTail Roller Reamer.

Reservoir Group Solution

Reservoir Group worked with the Operator on their well plan and recommended the WedgeTail™ Roller Reamer, which provides the same benefits of a stabilizer in eliminating drill string interference; however, because it rolls against the wellbore rather than dragging against the wellbore, **torque and vibration in the drill string are significantly reduced.**

Due to the high-performance of the WedgeTail Roller Reamer, the operator ran an efficiency test on four wells to achieve baseline data; two were planned with under-gauge stabilizers and two with Full Gauge WedgeTail Roller Reamers.

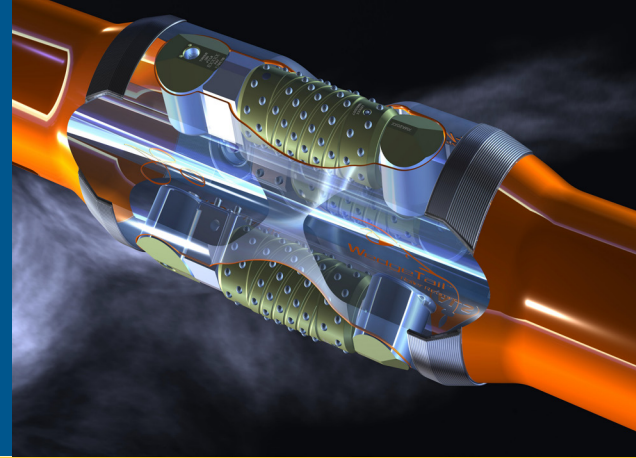


WedgeTail™ Roller Reamer Outperforms Standard Stabilizers:

- A 70.5% reduction in recorded maximum lateral shocks and 25.4% reduction in recorded average lateral shocks
- The reduction in stick-slip was significant
- The reduction in vibration allowed the operator to increase their weight on bit enabling them to increase their rate of penetration
- Using the WedgeTail™ Roller Reamer in the rotary steerable system' bottom hole assembly (BHA) compared to the wells using the under gauge integral blade stabilizers (IBS), showed significantly reduced lateral vibrations, resulting in drilling efficiency, BHA and drill bit performance, and also reduced risk for downhole tool failure.

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The WedgeTail™ Roller Reamer Advantage

The wells using Reservoir Group's WedgeTail™ Roller Reamers had **significant reduction in torque and vibration and increased drilling efficiencies** by eliminating drill sting interferences.

The customer is now using the technology on all six of its rigs, with plans to implement WedgeTail roller reamer in all wells in the Permian and other parts of the US, and ultimately global markets.

Reservoir Group's High-Standard of Service Quality

With defined drilling configurations and limited resources, Reservoir Group quickly manufactured reamer bodies to meet the operator's various needs. By customizing body lengths and converting connections, our experts were able to accommodate every configuration required to meet the drilling parameters and timelines.

In addition to our in-house engineering and expertise, Reservoir Group's standard of care sets us apart from other service companies. We redressed the tools at the rig site to ensure drilling was not interrupted, and hand-delivered the reamers to save the client from logistical costs. Our team was a true partner, maintaining constant communication throughout the job with the drilling engineers, rig personnel, and third-party companies providing updates on tool movements, trucking, inventory, production, inspections, and repairs.

