VIBRATION CONTROL BRINGS 20% IMPROVEMENT IN DRILLING EFFICIENCY.

Challenge
In this typical Barnett shale well, Beacon E&P required multiple bit trips to drill the tangent section through the Hard Atoka Sandstone.

Solution
APS Technology recommendation was to run the AVD™ on one well and confirm that the improvements seen on the drilling results were linked to the reduction in drilling vibration by running the VMS™ (Vibration Monitoring Sensor) on an offset well.

Results
The well where the AVD was run was drilled with fewer bit trips and a higher ROP. The savings averaged one and half days to the operator compared to offset wells. The tangent was drilled in 4 days.

“With the AVD in the hole, I can control the tool face during sliding with great ease as the BHA is very stable with less spikes on the differential pressure.”

- Directional Driller

Features
- Vibration reduction
- Stick Slip remedial
- Improved ROP
- Longer Bit Life
- Reduced NPT

Days vs Depth.
Vibration Control

The improvement in the drilling was confirmed to be linked to the reduction in drilling vibrations.

Axial (red) and Lateral (Blue) Vibrations in g

The peak axial vibrations were reduced from $4g$ to less than $1g$. The peak lateral vibrations were reduced from $20g$ to less than $3g$.

Torsional Vibrations, Stick-Slip

The torsional events were very significantly reduced as shown by the reduction in the separation between the min and max BHA rotation speed in the Hard Atoka Sandstone section.