

Case study: Haynesville shale play, United States

# Sabio Drilling Insights service recommends drilling parameters, cuts drilling time 25%

During a 2017 onshore drilling campaign for a customer in the Haynesville shale play, Baker Hughes collected surface and downhole data using the **Sabio™ Drilling Insights service** with **MultiSense™ HD modules**, which monitored high-frequency in-bit dynamics data.

Based on at-bit vibration data gathered in the wells, Baker Hughes presented this customer with aggressive drilling parameter recommendations to improve drilling performance on three subsequent wells being drilled in 2019.

Upon implementing many of the recommendations—including nearly doubling weight-on-bit in the 9 7/8-in. sections through hard, abrasive sandstone and carbonate—the customer realized a 25% decrease in section drilling time. The average time to drill these intermediate low-angle

tangents was 114 hours, compared to 152 hours in the 2017 wells.

The Sabio Drilling Insights service uses a cloud-based digital ecosystem combined with relevant surface drilling parameters. The MultiSense HD module provides an understanding of bit rotation and vibrations with a statistical summary every three seconds on stick-slip, whirl, torsional and axial vibrations for in-depth analysis of both on-bottom and off-bottom activities.

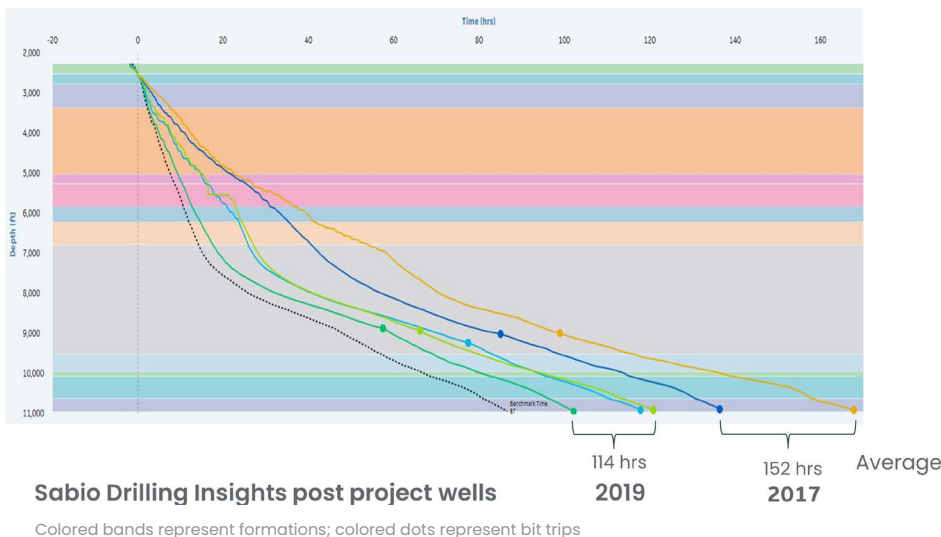
Sabio Drilling Insight’s ability to combine downhole MultiSense HD measurements with surface data to clearly identify drilling dysfunctions resulted in Baker Hughes application engineers recommending changes that saved 114 hours over three wells. With a spread rate of \$70,000 USD/day, the customer realized overall savings of \$330,000 USD.

## Challenges

Low ROP in hard abrasive sandstone and carbonate formations

## Results

- Improved section drilling time from 152 hours to 114 hours
- Saved \$330,000 USD over a three-well campaign



MultiSense HD is a self-contained and self-activated in-bit drilling dynamics module.