

CASE STUDY

MICROGUIDE REVEALS ERRORS IN MWD DATA, PREVENTING OPERATOR FROM ABANDONING THE WELL OR IMPLEMENTING UNNECESSARY ARTIFICIAL LIFT SYSTEM AND SAVING MORE THAN \$100,000

▶ TECHNOLOGY

- MicroGuide™ wellbore tortuosity logs

▶ APPLICATION

- Artificial lift
- Gas lift to rod lift conversion
- Production equipment placement

▶ LOCATION

- Bakken Shale

INDUSTRY CHALLENGE + OBJECTIVE

An operator in the Bakken Shale was transitioning a well on gas lift to rod lift and needed to better understand downhole conditions to ensure proper placement of the new production equipment. When the original MWD data indicated that there was high sideloading force against the 2⁷/₈-in. tubing, the operator decided to run our MicroGuide wellbore tortuosity logs to ensure that the original measurements were accurate.

TECHNOLOGY + SERVICE SOLUTION

- We recommended performing a comprehensive MicroGuide logging analysis to provide true insight into tortuosity over the entire depth of the well.
- Taking measurements with production casing set in 1-ft increments versus stand-length intervals 90-ft in open hole provides a detailed picture of true downhole conditions and issues that might be causing problems with artificial lift equipment.

RESULTS + VALUE DELIVERED

- After running our MicroGuide logs, we found that there was incorrect MWD data throughout the surface section that showed larger sideforce than was actually present. In particular, several incorrect data points were showing false dogleg severity and sideloading readings—some at approximately 1,250 lb/ft—at 2,116 ft.
- Had the operator used the MWD data instead of performing the MicroGuide analysis, they would have either abandoned the well (100% production loss) or changed it to plunger lift to account for the extreme sideforce, which would have cost more than \$100,000 and reduced production by almost 90%.
- Having detailed wellbore tortuosity data in production casing from MicroGuide provided insight into true downhole conditions, ensuring that the operator implemented the correct artificial lift system at an optimal depth to maintain production.

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