CASE STUDY

MICROGUIDE REVEALS SIDELOADING SPIKE IN PROBLEM SECTION, ALLOWING OPERATOR TO ELIMINATE ROD PUMP FAILURES

TECHNOLOGY

- MicroGuide™ wellbore tortuosity logs

APPLICATION

- Artificial lift
- Rod guide placement

LOCATION

- Canada

INDUSTRY CHALLENGE + OBJECTIVE

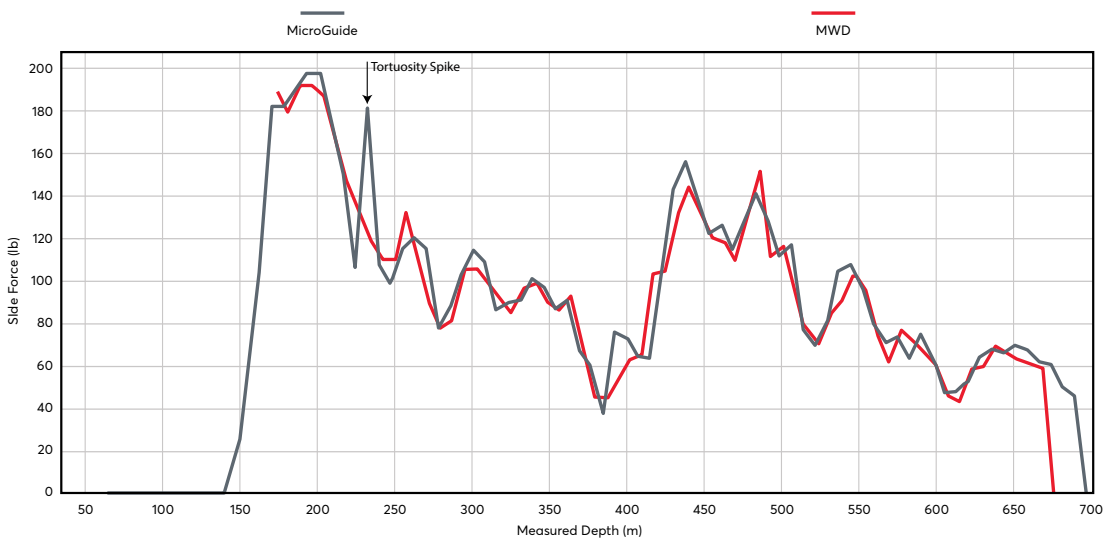
An operator in Western Canada needed to confirm their wellbore trajectory, as they were having issues with excessive rod wear. MWD surveys were not revealing any problems with sideloading force against the tubing despite the repeated rod breaks. To better understand the possible cause of the equipment failures and develop a solution, the operator requested a comprehensive wellbore tortuosity log through the build section to an MD of 700 meters.

TECHNOLOGY + SERVICE SOLUTION

- With only a conventional MWD survey available, we recommended performing a comprehensive MicroGuide logging analysis to provide true insight into tortuosity throughout the build section and to a predetermined MD.
- Taking measurements in 0.3-m increments versus typical stand-length intervals provided a detailed picture of true downhole conditions and issues that might be causing problems with artificial lift equipment. On this project, the operator took measurements at 10-m intervals; despite this, the data still did not show any side force anomalies, further highlighting the value of MicroGuide.

RESULTS + VALUE DELIVERED

- We first ran a gyro survey in the 3½-in. tubing from surface through the build section to 700 meters, which was at an inclination of 60°. The gyro surveys closely aligned with the original MWD survey data, confirming that the actual wellbore position was accurate and thus not directly linked to the rod failures.
- We then ran our MicroGuide wellbore tortuosity logs to obtain true insight into downhole conditions. The MicroGuide logs revealed a spike in sideloading force at approximately 235-ft MD that wasn't visibile in the MWD data. The operator confirmed that this was the area where they had the last three rod breaks and understood that the increased drag was the root cause of failure.
- After reviewing the information further, the operator was able to develop a plan to extend the coverage of their co-rod string to include the entire build section, mitigating the issue and eliminating future failures.



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