

## CASE STUDY

# MICROGUIDE REVEALS TORTUOSITY SPIKES AND LATERAL DISCREPANCY VERSUS COMPETITOR GYRO SYSTEM

### ▶ TECHNOLOGY

- MicroGuide™ wellbore tortuosity logs

### ▶ APPLICATION

- Artificial lift
- Rod guide placement
- Wellbore placement

### ▶ LOCATION

- Permian Basin  
(Eddy County, New Mexico)

### INDUSTRY CHALLENGE + OBJECTIVE

An operator in the Permian Basin drilled a well and used a competitor gyro tool for wellbore surveying. When preparing to put the well on rod lift for production, the operator requested that we perform wellbore tortuosity logging to ensure the accuracy of the existing gyro surveys and highlight any discrepancies with the placement of the wellbore and tortuosity severity throughout the well. We recommended our MicroGuide logs to obtain high-density data that would reveal true downhole conditions.

### 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 in 1-ft increments versus stand-length intervals provides a detailed picture of true downhole conditions and issues that might be causing problems with artificial lift equipment.

### RESULTS + VALUE DELIVERED

- The MicroGuide data showed that the well was straight down to the the kickoff point and that there was no bending down to approximately 4,370 ft. The original survey data had more than a dozen incorrect azimuth readings (**Fig. 1**), which would have led to the operator taking a costly and unnecessary approach to placing the rod guides.
- The MicroGuide data showed significant variance in tortuosity versus the competitor gyro data, with our system showing that the competitor had measured incorrect tortuosity spikes in almost every survey (**Fig. 2**).
- The MicroGuide data revealed a lateral discrepancy of 27 ft (**Fig. 3**) versus the original gyro surveys, further proving the lack of quality data.

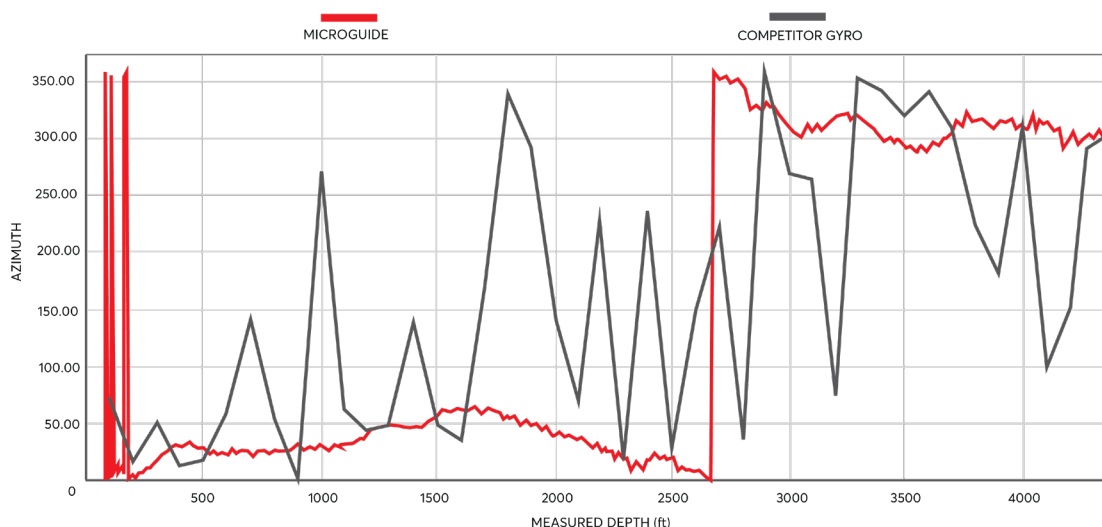


Fig. 1—The graph shows the clear differences in azimuth readings between the original gyro surveys and the MicroGuide logs throughout the well.

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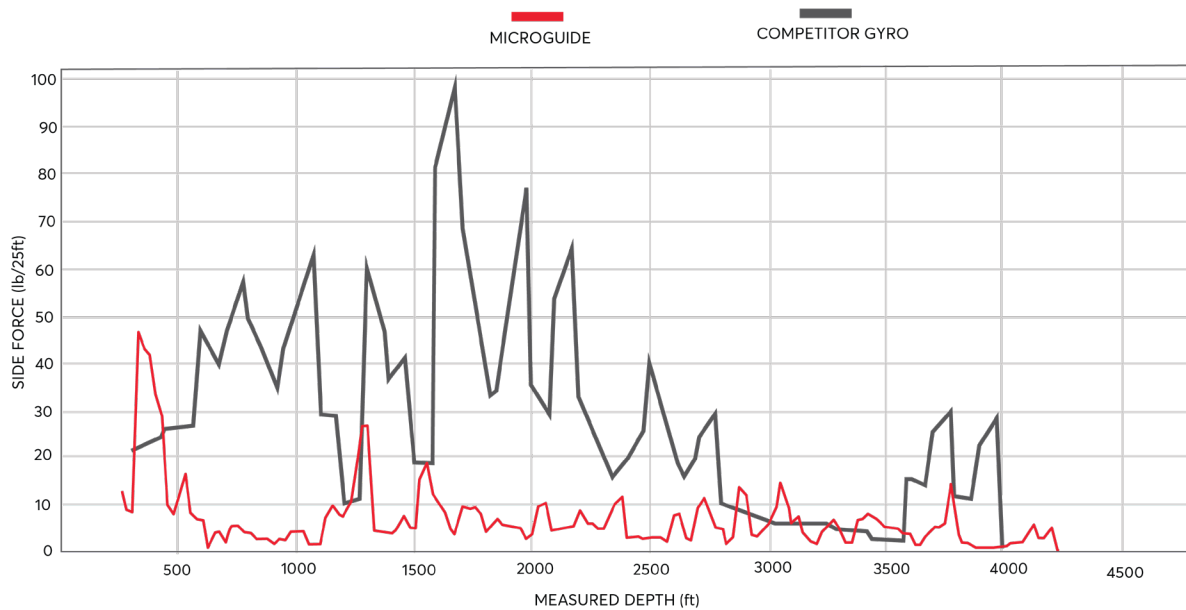


Fig. 2—The MicroGuide analysis showed that virtually every sideforce measurement calculated with the competitor gyro was incorrect, which would have led to the operator wrongly believing they needed specialized equipment to place production equipment.

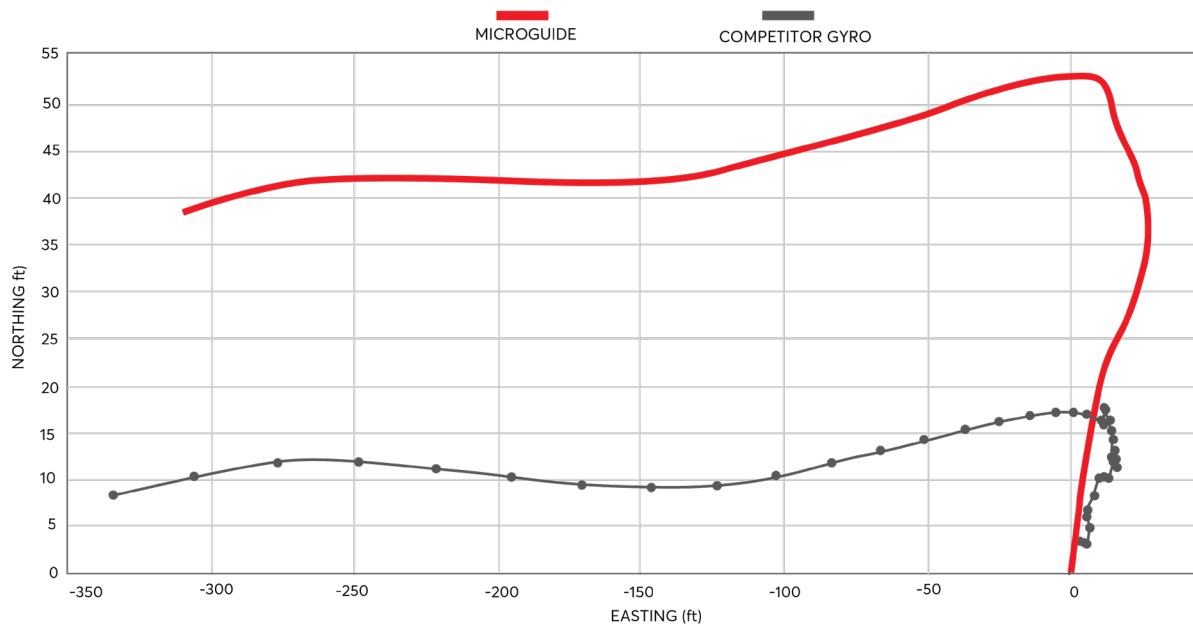


Fig. 3—The MicroGuide logs revealed that in the original survey data, there was a lateral discrepancy of 27 ft versus the actual wellbore placement.