

CASE STUDY

MICROGUIDE LOG LOCATES AN OPTIMAL LOCATION FOR SETTING AN ESP DEEPER THAN ORIGINALLY PROPOSED

▶ TECHNOLOGY

- MicroGuide™ wellbore tortuosity logs

▶ APPLICATION

- ESP Location Optimization

▶ LOCATION

- West Texas

INDUSTRY CHALLENGE + OBJECTIVE

An operator in the Permian Basin was installing an ESP due to a decrease in production after free flowing for a short period of time. Per the operator's standard procedure, a MicroGuide Log was obtained to assist the placement of the ESP and cable clamps.

The operator's proposed ESP depth was based off dogleg calculations obtained during drilling. This showed the ESP would be placed in an area with less than 2 degrees of bend, which is the commonly accepted recommendation criteria by ESP providers.

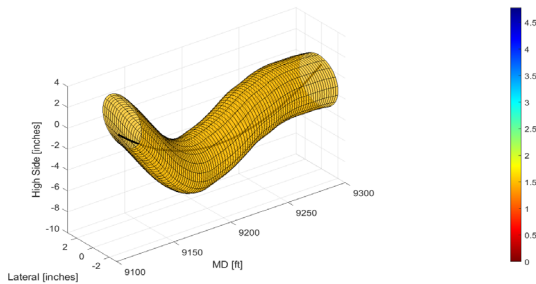
TECHNOLOGY + SERVICE SOLUTION

- MicroGuide log analysis to provide true insight into tortuosity over the entire length of the well.
- High-definition tortuosity data versus stand-length dogleg calculation provides a detailed picture of the true downhole conditions of the casing string.

RESULTS + VALUE DELIVERED

- The MicroGuide log revealed the original proposed ESP location was not an acceptable location and would likely cause premature ESP failure due to excessive bend. Utilizing the tortuosity analysis rather than the dogleg calculation method for this application identified an acceptable ESP location was 139 feet deeper in the casing string. In general, an additional benefit of a deeper ESP location is an increase in pump efficiency.

3D representation of transversal displacement. Color temperature is proportional to the maximum diameter of device in inches. At a Measured Depth of 9211.0 ft, the maximum diameter of a device is 1.49 inches, at a device bend of 0.528 degrees / 100 ft. For a device of diameter 4.00 inches, a uniform bend below the allowed maximum was not found.



3D representation of transversal displacement. Color temperature is proportional to the maximum diameter of device in inches. At a Measured Depth of 9350.0 ft, the maximum diameter of a device is 4.35 inches, at a device bend of 0.232 degrees / 100 ft. A device of diameter 4.00 inches will undergo a uniform bend of 0.164 degrees / 100 ft.

