

CASE HISTORY

DOUBESHOT IMPROVES LATERAL SURVEYS AND REDUCES TVD UNCERTAINTY

APPLICATION

Horizontal Wellbores
Infill Drilling
TVD Resolution

TECHNOLOGY

Magnetic MWD

LOCATION

Casper, Wyoming

CUSTOMER CHALLENGE

While infill drilling in a well-developed field, gamma data referenced to MWD surveys was not correlating with existing data from offset wells and pre-drill models. Further investigation revealed that standard MWD surveying procedures were not mapping the true path of the lateral wellbores. Doglegs from short sliding intervals in the horizontal section were not being properly measured with a 95ft survey interval. The end result was TVD errors of 15ft or more. This TVD uncertainty led to difficulties in both geosteering and geological reservoir mapping for future wells in the area. Stopping for additional surveys during the drilling process was undesirable, as it could add up to a significant amount of additional rig time when considered across the entire campaign. The challenge was to provide an ideal solution which delivered final wellbore position accuracy without compromising drilling efficiency.

SCIENTIFIC SOLUTION

Scientific Drilling was able to leverage MWD memory data to reduce the effective course length for the surveys and generate a better well profile. The MWD was programmed to act as a mutli-shot when tripping out of hole so that additional surveys could be attained. The memory surveys were then combined with the real-time data acquired whilst drilling to make a new 'survey with shorter intervals. Upon analyzing the logs with corrected TVDs, the data was found to better correlate with offset wells and pre-drill expectations.

CUSTOMER VALUE

The operator was able to utilize Scientific Drilling's Doubleshot service immediately and without additional equipment or time requirements. Drilling, geological and wellbore position priorities were optimized. Improved lateral surveys resulted in better correlation between MWD, offset and geological data ultimately allowing the operator to model and plan current and future prospects more effectively.

