

GWDC Set the Fastest Construction Record of Horizontal Wells in Kailu Basin

Challenges

-Complex changeable formation and

Well XX, constructed by one rig crew of GWDC, was located in Kailu Basin, China. Designed well depth was 3110 meters including 1290

9 days was saved

meters horizontal section. The formation was complex and changeable, and the average well construction period in this area was long for 50 days.

Solution

- Utilization of rotary steering drilling system

Challenged by the abovementioned technical difficulties, GWDC formulated a technical template on how to improve the drilling rate, increase the work efficiency and avoid the occurrence of complicated situation. Secondly, GWDC utilized rotary steering drilling system in horizontal section to overcome the friction caused by slide drilling and increase the cutting discharge capacity, which not only avoided the dragging weight during the process of orientation but also smooth the well profile. Thirdly, floating cementing technology was adopted in casing cementing operation, on the basis of calculating the collapsing strength of casing string, the Company added float collar to casing string and low density drilling fluid was input and sealed between casing shoe and float collar, by which certain buoyancy was produced on the string and reduction of the friction between casing and wellbore was realized during the process of casing running, then casing running time was saved nearly 50%.

-Floating cementing technology adopted in casing running

Results

- Well construction period was 41.87 days and 9 days was saved

- The fastest record of horizontal well construction in the block

Well XX was completed with a total depth of 3118 meters and a horizontal section of 1298 meters. Drilling cycle was 25.87 days, average drilling rate was 11.89 meters per hour which was increased by 5.38 m/h compared with the past performance. Well construction period was 41.87 days and 9 days was saved, which created the fastest record of horizontal well construction in the block.