

Vertechs' REALology Intelligent Drilling Fluids Rheology Monitoring System Improve Drilling Efficiency in Complex Exploration Wells

Location: Southwest China

Time: June 2021

Challenge:

- Narrow drilling window;
- ECD fluctuations aggravate the instability of the wellbore and stuck pipe;
- H2S;
- Bottom hole temperature is up to 311°F;

Purpose: The the operator hopes to monitor drilling fluid rheology in real-time by using REALology to guide daily maintenance, reduce ECD fluctuations, and solve the complex downhole problems such as wellbore instability, stuck pipe or losses.

Process: REALology was installed on the mud tank. Real-time data was transmitted wirelessly every few minutes and displayed on computers in the field and operation support center.

During 22 days of drilling from 5,730m to 6,200 m, a total of 91 sets of abnormal drilling fluid rheology (PV,YP) and density were detected and 2,304 sets of rheology and density datasets were recorded. It enables more efficient drilling fluids performance management and helps minimize ECD fluctuation to reduce downhole in drilling operations.

Results:

- 1) Help the operator reduce drilling downtime.
- 2) Minimize ECD fluctuation, prevent losses, and wellbore instability.
- 3) Saving over \$200,000 for the operator while comparing with offset wells.



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