

AES ANALYTICS[†] Optimizes Mud Weight, Eliminates Wellbore Instability



CHALLENGES

- Pack-off and mechanical sticking while running in hole
- Lost time reaming to bottom and working stuck pipe



SOLUTION

- Verified insufficient mud weight through AES ANALYTICS offset tool

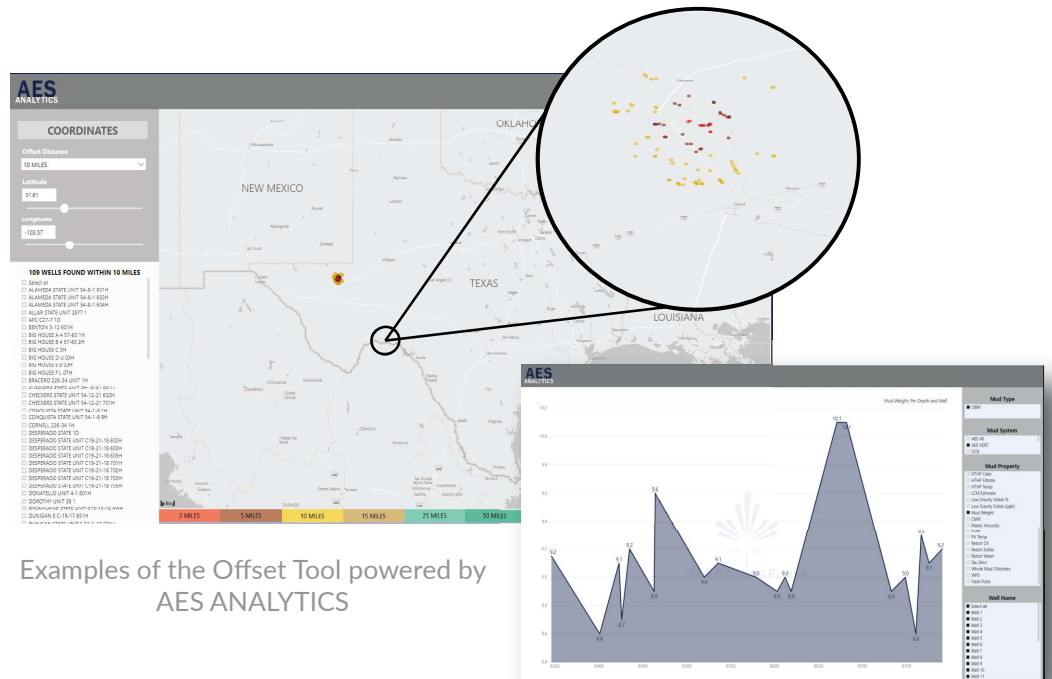
Geo-fence data suggested an additional 0.6 lbm/gal mud weight maintains stability based upon offset wells within a 10 mile radius

- Fluid density increased based on offset information



RESULTS

- No further wellbore instability issues encountered
- Drilled to TD, tripped out of hole, and ran casing to bottom with no issues
- Operator requested review of offset data through AES ANALYTICS on all future operations



OVERVIEW

After making a BHA run, an operator in West Texas experienced packoff and repeated sticking events. Changes in drilling parameters attempted to resolve the issue with little-to-no improvement.

The account manager opened the AES ANALYTICS offset tool to compare properties of any other wells drilled in the area. Using the offset tool and its multiple filters, similar well conditions were isolated for comparison. The geo-fencing filter narrowed the region of interest to wells within a 10-mile radius, showing that all trouble-free scenarios used mud weights of at least 0.6 lbm/gal higher than the current mud weight.

This data, along with large cavings seen at the shakers, supported the concern that insufficient mud weight was contributing to hole problems. The data was presented to the operator and a decision was made to increase the mud weight by 0.6 lbm/gal. After weighing up the system, no further issues were encountered.

DETAILS

The operator performed a routine trip due to BHA failure while drilling a 2 ½ mile lateral in the Permian Basin. Normal tripping operations were delayed by constant drag issues and stacking weight. Circulating began with periodic pressure spikes indicating pack-off. Reaming operations were required to get back on bottom. While reaming in, large cuttings/cavings were observed coming over the shale shakers. Multiple attempts were made to stabilize the wellbore by adjusting reaming parameters and drilling fluid properties. Data gathered from AES ANALYTICS revealed ESD requirements were 0.4 to 0.7 lbm/gal greater than the current drilling fluid weight. The operator drilled the remainder of the wellbore to TD, gradually increasing density. Cleanup cycles indicated no abnormal cuttings and trip out was performed with no added circulation or reaming. Casing was run to bottom with no issues.





AES DRILLING FLUIDS

www.aesfluids.com

☎ Phone : 281 556 5628

✉ Email : info@aesfluids.com

© 2020 AES Drilling Fluids. All rights reserved. The information provided is for informational purposes and is believed to be accurate, although this cannot be guaranteed. No guarantees or warranties are stated or implied. †Marks of AES Drilling Fluids, LLC.

Revision 1.00

