LINQX

Case Study

From Simulation to Execution: Enhancing Cementing Decisions Through Real-Time CEMPRO Monitoring

Challenge

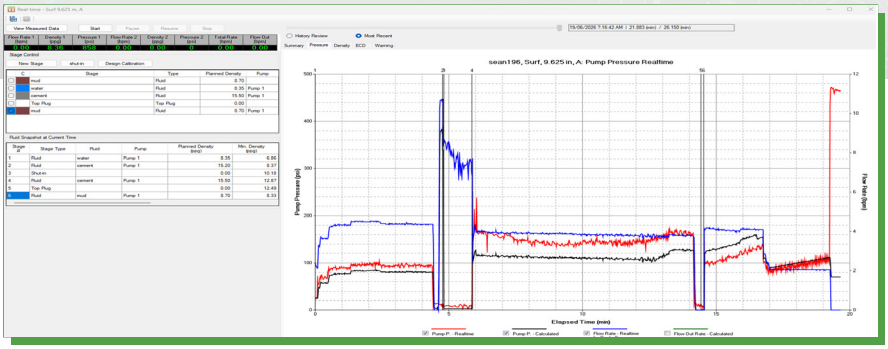
Surface measurements alone are often insufficient to assess downhole conditions during cementing operations. Engineers need reliable downhole risk indicators, such as ECD at bottom and fragile zones, to identify potential issues and make informed decisions while the job is in progress.

Solution

Enhance real-time monitoring and post-job analysis with improved stage tracking, history review, and direct comparison of measured vs. calculated pressure and ECD limits for more efficient evaluation and decision-making.

Results

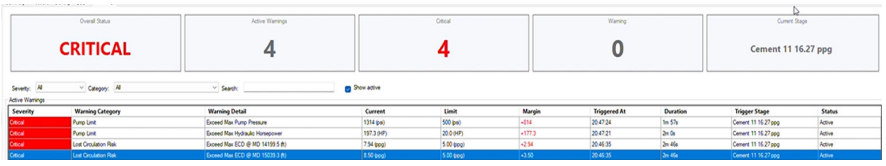
The results provided validation of the realtime pressure calculations through close agreement with field measurements. Customer feedback confirmed improved operational control, while the Warning page provided useful indications of potential downhole ECD risks, supporting safer and more efficient cementing operations.



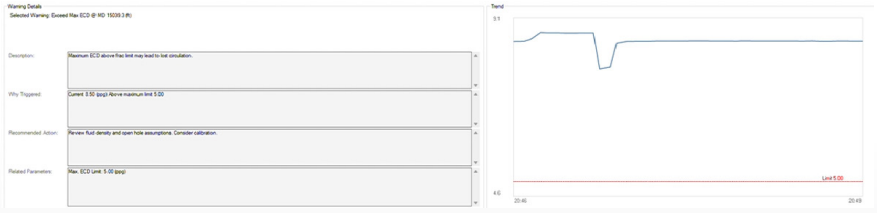
Real-time pressure comparison shows measured pressure and calculated pressure tracking across job stages.

CEMPRO real-time provides engineers with improved operational visibility during cementing execution. Measured channels and calculated results can be reviewed together, while the stage panel maintains visibility of the active pumping sequence, planned density, and pump assignment. The history slider enables quick review of previous job behavior within the real-time workspace. The Warning section extends monitoring beyond surface data by calculating ECD at bottom and selected fragile-zone depths, providing early indications of downhole risk.

Pressure validation	The pump pressure plot overlays realtime measured pressure with calculated pressure, allowing engineers to confirm that the simulation response follows the field trend.
Stage control	The stage list and current-fluid snapshot support live tracking of planned density, actual minimum density, active pump, and stage transitions.
ECD visibility	CEMPRO real-time can monitor ECD at bottom and fragile zones that are not directly visible from surface channels during the job.
Critical warning	When ECD exceeds the defined limit, users can review current value, limit, margin, trigger time, duration, trigger stage, trend, explanation, and recommended action.



Critical warning lists ECD at fragile-zone MDs against defined limits.



ECD trend and warning details expose downhole risk that was previously invisible.

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Get In Touch