Location: Delaware Basin, Wolfcamp Formation, and Anadarko Basin, Woodford Formation

Schlumberger

Independent Operator Eliminates Sustained Casing Pressure

CemPRIME Scrub spacer and CemFIT Heal system improve cement bonds to prevent gas migration behind the production casing, Texas and Oklahoma

An independent operator with wells in Texas and Oklahoma solved sustained casing pressure (SCP) problems with a fit-for-basin combination of optimized hole cleaning and self-healing cement.

Eliminate squeeze cementing

The operator wanted to eliminate SCP gas flaring, pressure releases, and the cost of squeeze jobs to remediate sustained casing pressure in Delaware and Anadarko Basin wells drilled using oil-based mud (OBM) in tight holes—5½-in casing in 6¾-in annulus—that precluded midcasing centralization.

Change slurry and annular gaps

The slurry was redesigned with a gas migration control additive and optimized spacer volume to match spacer surfactant screening test (SSST) results. However, these changes did not improve the casing pressure problem. The operator also tried changing the annular gaps and using other slurry options; these changes reduced but did not eliminate the SCP.

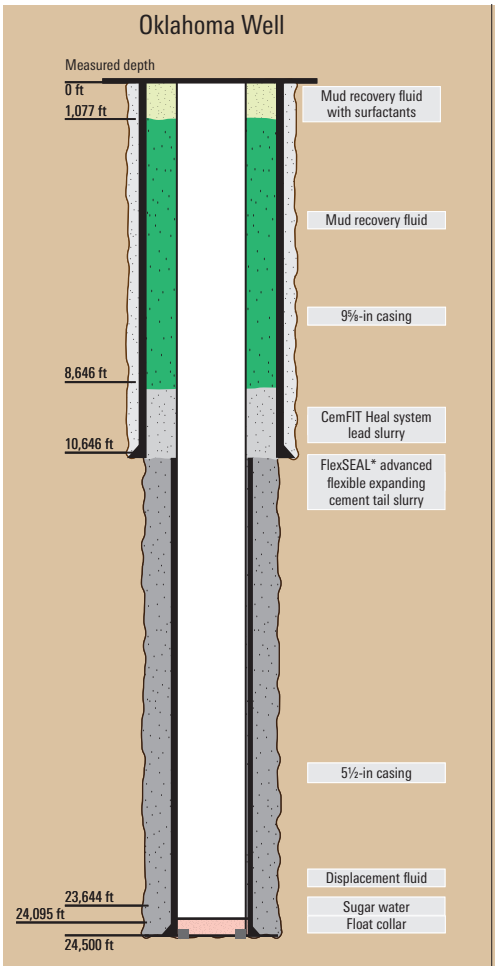
Pump new cementing technology

CemPRIME Scrub* engineered scrubbing spacer contains fibers that improve mud removal in wells where conventional chemistry-based mud cleaning systems are inadequate—such as wells drilled using OBM.

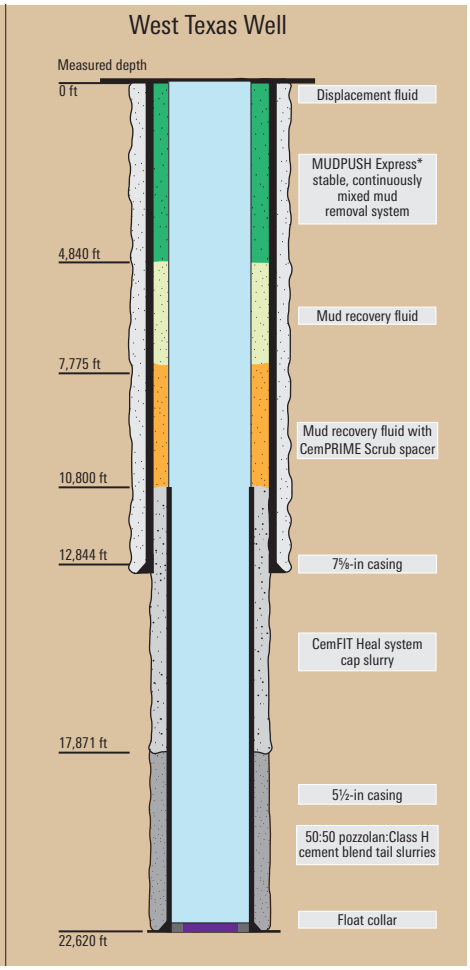
CemFIT Heal* flexible self-healing cement system withstands wellbore stresses but, should any isolation defects appear, repairs itself on contact with oil or gas irrespective of methane content.

Isolate without remedial cementing

The spacer and cement combination eliminated sustained casing pressure in the operator's wells in both fields. The solution was economical because the designs used CemFIT Heal system only as a lead slurry to cap the annulus rather than filling the entire annulus. For wells that otherwise would have required remedial operations to eliminate SCP, the operator is saving more than USD 50,000 per well.



In Oklahoma, using a relatively small volume of CemFIT Heal system as a lead slurry cap maintained well economics while eliminating SCP.



In Texas, the CemPRIME Scrub spacer system prepared the well for CemFIT Heal system lead slurry cap and pozzolan blend cement, also eliminating SCP.

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