

West Africa Operator Boosts Zonal Isolation in Horizontal Well

CemFIT Shield system improves cement bond logs across all production zones

To improve zonal isolation in long horizontal offshore wells drilled with nonaqueous fluid (NAF), an operator in West Africa used CemFIT Shield* mud-sealing cement system, achieving significantly better bond logs as compared with nearby wells cemented using conventional slurry at the same density.

The operator's concerns

Poor cement bond logs across production zones in some offshore wells induced compromises in subsequent perforating and multistage stimulation operations. Conventional cementing technology was leaving channels of oil-based drilling fluid (OBM) in long (1,200-m) horizontal segments even when following cementing best practices for mud removal, centralization, and casing movement.

What was tried first

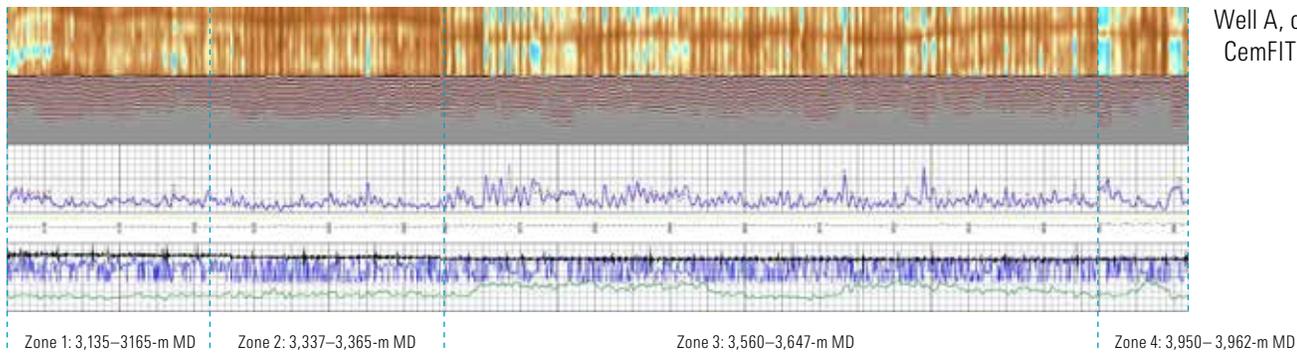
As an initial step to improve the NAF removal and water-wetting of downhole surfaces, the operator used CemPRIME* engineered chemistry spacer, which improved bond logs but still left channels where casing standoff is not optimal. Furthermore, the centralizer distribution was increased from an average of one per two joints to one per joint, but the result remained less than optimal.

What Schlumberger recommended

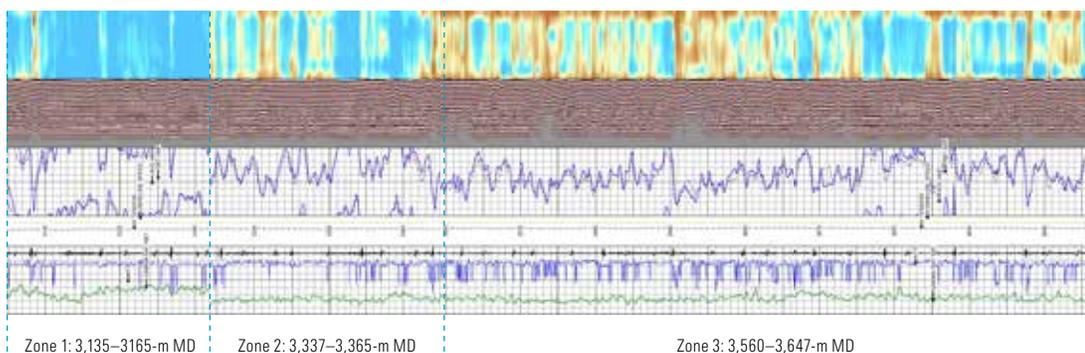
CemFIT Shield system improves zonal isolation in wells drilled with NAF, especially in a long horizontal well where limited casing standoff or inability to move casing impeded complete mud removal.

What the operator achieved

After extensive laboratory testing and blend characterization, Well A was cemented using CemFIT Shield system. Bond logs verified the high quality of the cement sheath across all of the production zones, a marked improvement as compared with a neighboring well cemented conventionally. The result enabled well perforation to proceed as designed, without compromises to accommodate the detrimental effects of channeling on subsequent multistage stimulation operations.



Well A, cemented with CemFIT Shield system



Neighboring well, cemented conventionally

Well A, top, cemented using CemFIT Shield system, has a much better bond log across all production zones, as compared with a neighboring well, bottom, cemented using conventional cement.

*Mark of Schlumberger
Other company, product, and service names are the properties of their respective owners.
Copyright © 2020 Schlumberger. All rights reserved. 19-CE-620949