Effective Use of Swellpacker® Systems Achieves High Production, Saves Time and Reduces Costs for Mexico Operator

Location: Latin America

**OPERATOR’S CHALLENGE** – An operator in Mexico needed effective zonal isolation in order to stimulate two zones and increase productivity through a 5-in., 18 lb/ft liner inside a 5 7/8-in. hole. The customer also wanted to isolate unwanted formations and achieve a larger contact area with the formation.

Wells in the same field had encountered inadequate zonal isolation after the primary cement job, and the operator wanted to prevent re-cementing the liner. Other concerns they wanted to avoid included damage by the cement to the formation, perforating operations and the abandonment of invaded intervals with water.

**HALLIBURTON’S SOLUTION** – Halliburton reviewed the wells in the same field in which serious problems were encountered during the completion stage. These wells also had a 5-in. liner inside a 5 7/8-in. hole, depths of 6,000 m, pressures greater than 8,000 psi, and temperatures over 160° C. In order to complete the objectives, Halliburton recommended using a Swellpacker® zonal isolation system.

The 5-in., 18 lb/ft Swellpacker system has a slotted liner of the same size to selectively isolate and avoid damaging the zones of interest with the pumping of fluids that may damage the formation. The Swellpacker system has the dynamic capacity to swell and therefore continues to seal inside of an open hole, even with the development of “caves” due to production. It helps ensure an isolation of zones at extreme temperatures.

**VALUE CREATED** – Selective isolation was achieved according to customer needs. The customer ran a Spectrascan® log and validated that only the selected zone was stimulated, confirming the effective seal of the Swellpacker system. The log demonstrated that the formation directly received an injection of treatment products, and there was no communication between fluids to the isolated zones.

Cementation and perforating were eliminated, and an open hole was produced through a slotted liner eliminating damage to the formation. Costs were substantially reduced through time savings at the completion stage as well as associated costs to these operations. Higher production than expected was achieved.
These logs correspond to sections of the Spectrascan® logs and provide vital information about the isolated zones. With the help of tracers we can observe that the isolated areas of interest received proper injection. The pumped fluid contains radioactive tracers (indium and scandium) injected across the slotted liner, and the Swellpacker® systems helped avoid migration to other areas. Closer review of these logs confirms that the Swellpacker systems stopped the crossflow in the annular space between open hole and liner.

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