

Gulf of Thailand

“Cement through TRSV” operations

Cement through TRSV solutions successful in Gulf of Thailand for more than five years

CHALLENGE

To ensure TRSV functionality for cement through applications, the key focus areas during installation are:

- Wiper dart deployment
- Clean fluid displacement
- Cement cure time

SOLUTION

Multifaceted solution to cement through TRSV:

- Valve design features to prevent debris accumulation
- Coatings to prevent cement adhesion within TRSV
- Detailed procedures for “cement through” operations

RESULT

More than five years of successful “cement through TRSV” operations with zero NPT related to valve failure

Overview

The elimination of production casing and cementing a monobore completion tubing string in place as the main production conduit is a common completion methodology for the economic development of fields with short well life. This method effectively replaces the production casing with a completion string that is run into the drilled openhole section and cemented in place, which is referred to as a “cement through” application. This reduces rig time and costs through the elimination of a standard liner and subsequent wellbore cleanup operations. It also eliminates liner hangers, production packers, and other completion accessories. However, installation of a tubing retrievable safety valve (TRSV) is still necessary for many of these “cement through” completion designs.

Challenge

The safety valve might not function as designed after the cement application if cement debris becomes trapped in the valve components and compromises flow tube movement (or the valve’s capability to seal). The TRSV design and operational practices during cement operations are critical to ensure the valve functions properly after the cement operation.



Halliburton’s enhanced TRSV design features combined with robust deployment procedures help eliminate downtime and ensure long-term valve functionality.

Solution

Halliburton developed a solution to address these challenges through a combination of valve design features, the addition of a manufacturing specification for “cement through” applications, and adherence to a “cement through” valve operational procedure.

Valve design features include the metal-to-metal (MTM) seating of the opening prong to the lower shoulder of the bottom sealbore, which helps keep the flapper and critical components isolated. This prevents cement accumulation during cement operations. In addition, inverted flow tube designs and a wiper ring with cleanout ports help clear potential cement debris during valve cycling.

Based on more than 20 years of experience with “cement through valve” installations, Halliburton developed operational procedures to help reduce the risk associated with “cement through TRSV” installations. These procedures eliminate downtime and help ensure long-term valve function.

Result

Halliburton delivered engineered completion solutions and technical expertise to an operator in the Gulf of Thailand during “cement through TRSV” installations from 2016 to 2021. This resulted in the successful installation of more than 330 valves with zero NPT related to equipment failure.

By providing engineered completion solutions with distinctive service quality, Halliburton has performed more than 3,200 “cement through TRSV” installations worldwide to maximize operator asset value.



3,200

“cement through TRSV”
installations performed
worldwide



20

years of experience
with “cement
through valve”
installations



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