



CASE STUDY

First Disappearing Tubing Hanger plug installed and successfully closed bypass sleeve with electrical closing mechanism.

Product

Disappearing Tubing Hanger Plug (DTHP)

Outline

- First Disappearing Tubing Hanger plug with fluid bypass sleeve installed
- Remote closing mechanism – sliding sleeve
- Remote opening mechanism – barrier plug.
- TR 2385 qualified control line clamp for routing of control lines.

Challenge

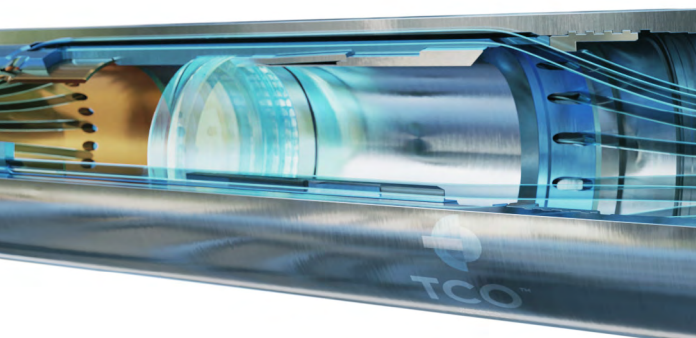
A major operator in NCS is currently in the process of drilling and completing a massive subsea campaign. TCO delivered barrier plugs for both lower- and upper completion. The challenge was to come up with a guaranteed shallow set secondary barrier for suspension purposes and creating unique cycling system not interfering with other planned operations.

Challenges we were faced with:

- Route control lines past the shallow barrier plug with control line clamps.
- RIH open, set production packer and test completion by pumping through the plug.
- Remotely close the DTHP shallow set plug and establish secondary barrier.
- Minimize the trapped pressure below plug after closing bypass function.
- Pressure test Vertical Christmas Tree.
- Suspend the well for 6-18 months to then be remotely opened from platform.
- Maintaining a full-bore ID after opening.
- Needs to maintaining a full-bore ID after opening.

Solution

The technology is based on an already recognised plug system with remote open mechanism. The solution was to redesign and introduce a bypass function, while keeping the field proven features of the plug. By introducing an extremely pressure-flexible and accurate electrical device, to remote close the bypass function, the client stood free to choose between several pressure signatures.





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Result

Introducing the Disappearing Tubing Hanger Plug as a shallow set barrier TCO were able to overcome every challenge. The DTHP allows for fluid bypass for circulation and fluid bypass while running in hole. By introducing the E-Trigger, TCO made it possible to close the bypass sleeve with a unique signature fitted for this application.

With control line clamps as part of the barrier plug, 5 control lines (with room for more) were fastened and safely routed past the plug. This resulting in the operator to safely install the vertical Christmas tree and suspend well with two TCO barrier plugs in well.

Highlights

- Control lines fastened and safely routed past the plug.
- V0 rated barrier plug once sliding sleeve was closed
- Flexible E-trigger signature for closing the sleeve.
- Operator can safely suspend well and remotely open the plug from production platform.

