



PERFORMANCE BULLETIN

First split-flow application using a ‘wired’ PBL® was deployed by an operator in the Norwegian sector of the North Sea

Challenge

A major oil & gas operating company in Norway had a requirement to deploy a DSI PBL® multiple activation bypass tool for an application where the operator had already reached TD with 100% of the flow to the bit, but prior to running the lower completion, and on POOH, wanted to divert 80% of the circulation to the annulus to boost the flow rate and dynamically clean the 13-5/8” casing by improving the annular velocity without the need to perform a dedicated clean out trip. The main challenges facing DSI were:

- PBL® bypass system must have full IntelliServ compatibility,
- PBL® bypass system must permit uninterrupted communication across the tool,
- PBL® bypass system must be able to split the flow and divert a predetermined percentage of the flow to the annulus and the remaining flow to the BHA below.

Solution

DSI, in partnership with TFS Services, provided this operator with a “wired” DSI PBL® multiple activation bypass system with “split-flow” capabilities. The wired PBL® had been re-designed to provide full IntelliServ compatibility and to allow uninterrupted communication across the tool, while by using the Split Flow Dart allowing a predefined ratio of the flow to be diverted out from the PBL to the annulus and the remaining flow to the BHA.

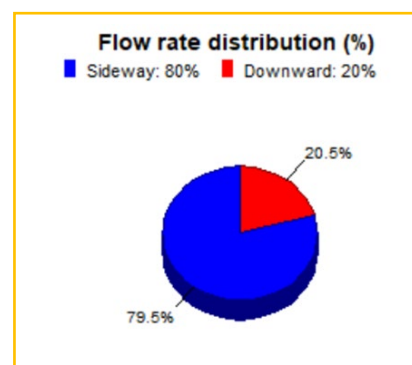
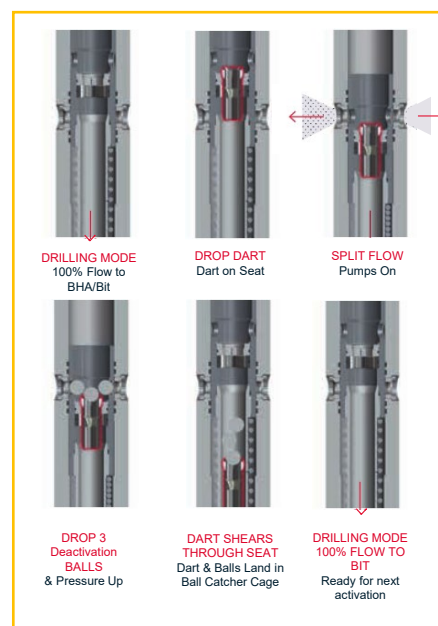
Execution

Prior to dropping the Split Flow Dart, a reference pressure was recorded and, upon landing on the PBL® seat, a pressure increase was recorded indicating successful deployment and activation. The flow rate was increased rapidly to open the ports and commence 80% of split flow fluid diversion to the annulus. After proper hole cleaning had been completed, the tool was successfully deactivated and 100% of the flow was directed to the bit for the remaining POOH to surface.

Prior to running, DSI performed in-house hydraulics calculations, and the tool was fitted with 2 x 24/32” port nozzles (TFA = 0.884 sq. inches) and the 1-3/4” split flow dart had 1 x 20/32” dart nozzle (TFA = 0.307 sq. inches).

Conclusion & Recommendation

Due to the success of this operation, the wired PBL® is now included in the BHA for the next well.



DSI’s in-house hydraulics software was utilized to determine the correct ports and dart nozzle sizes to deliver the desired split flow ratios.