



Electronic Circulating Valve Case Study

AkerBP – Ivar Aasen Field

The 7” AVS electronic multi position, multi cycle circulating valve was chosen by AkerBP, over conventional drop ball systems, for their D17 / AY4 / AY2 multi lateral well on the Ivar Aasen field, offshore Norway.

Application

AVS in the 8 1/2” drilling BHA to drill out 9 5/8” shoe track and 2200m lateral AY4 to TD at 5605m. AVS to be switched to Splitflow position for TD clean up then back to ThruBore for trip out of hole.

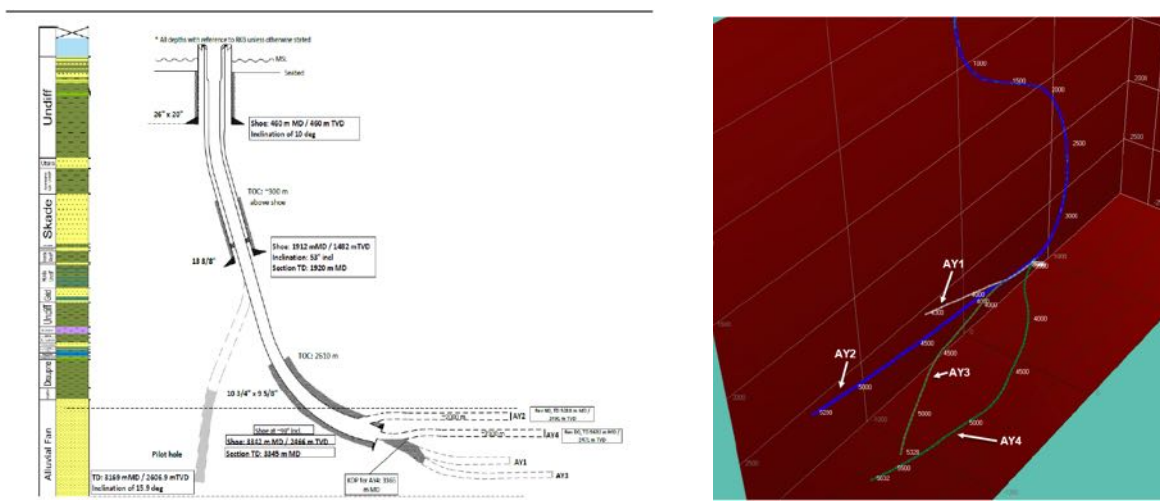
Objective

Historically, AkerBP were spending over 2 hours per activation for conventional drop ball / dart systems. In one well they spend 9 hrs making 4 activations. AkerBP wanted to reduce rig time/cost and also wanted to trial the Splitflow feature of the AVS to improve clean up times and effectiveness.

Results


AY4 was drilled horizontally to 5605m MD with 1900lpm and 2700psi pump pressure. The AVS was downlinked to and switched to Splitflow position. The 4x8/32” nozzles delivered a Splitflow of 27/73 with 1750lpm through the BHA and 650lpm through the AVS nozzles. A total flowrate of 2400lpm for the same pump pressure of 2700psi. The well was cleaned up quicker with higher Annular Velocities and the trip out the hole was good requiring minimal back reaming. AkerBP estimated at least 2 hrs rig time was saved activating the AVS in comparison to drop ball systems.

AkerBP recommend the use of the AVS and intend to run it in preference to drop ball systems. See the full endorsement below.



"AkerBP ran the 7" AVS electronic multi position circulating valve as part of the 8.5" Drilling assembly on well D17/AY4 in the Ivar Aasen field offshore Norway through the Maersk Integrator Jack Up rig. This is a multi lateral well with 9 5/8" casing set at 3342m horizontally. The shoe was drilled out and the AY4 lateral drilled horizontally to TD at 5605m. At TD the pump rate was 1900lpm with 2700psi surface pump pressure. The AVS was sent a pump cycle downlink and shifted to Splitflow position, taking approximately 10 minutes. The 4 x 8/32" nozzles in the AVS allowed a 27 / 73% flow split. The clean up continued at an enhanced pump rate of 2400lpm for the same pump pressure of 2700psi with 1750lpm through the BHA and 650lpm through the AVS nozzles. The wellbore was circulated clean and mud conditioned for approximately 8 hours. The AVS was then sent a pump cycle downlink and shifted back to Thru-bore position taking approximately 8 minutes.

AkerBP are very pleased with the performance of the AVS and note the time saving activating the AVS compared to a drop ball system was about 2 hours. In the Splitflow position the enhanced flow rate allowed the well to be cleaned up quicker and more effectively with higher Annular Velocities contributing to a good trip out the hole with minimal back reaming. AkerBP intend to use the AVS again on future wells, both as a circulation sub for clean out but also for pumping coarse LCM."

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