

Custom 5.75" Packer System Revolutionizes CBM Well Sump Clean-Out and PCP Completion Success

The Problem:

The main challenge with these specific coal bed methane (CBM) wells is the ability to flush out the residual coal fines from the sump bottom up to surface post Drilling operation, and prior to running PCP Production Equipment into the well. Attempting with the conventional methods by high flow rate circulation at the bottom of the well wasn't successful, as the drop in up-hole circulation velocity when the flushing fluid passes the 16" underreamed section, causing the heavier fines/cuttings to divert and gravitate downwards, eventually accumulated back at the sump bottom due this large 16" cavity on the way upward.



Region: Africa
Customer: CBM Operator
Well Type: Development

The use of air to flush the sump to overcome the velocity issue has resulted in a sudden unloading of the well which has caused an inrush of fines and damage to the formation in the lateral section, increasing the fines fragments, rather than evacuating to surface, In addition, the customer has tried sand pumps and bails in the past with no significant outcome.

Our Solution:

To overcome the associated issues during the flushing process, the Idea of using two annular conduits where the packer is installed on a string of HWT casing, inflate below the 16" under reamed section to effectively isolated the under-reamed section, then deployed a Clean Out BHA on HQ Drill Pipe into the HWT casing and the packer ID, then reamed from below the packer to the bottom of the well while evacuating all cuttings and fines back to surface via the reduced annular section between the HWT casing and HQ Drill pipe, this confined annular volume has enabled for enough circulation velocity for the fines to circulate up to surface.

A Slim and Slick 5.75" Packer System with an external inflation system has been designed to operate within such a tight well clearances and limitation (running the packer system through 7" 23ppf casing, whilst having a bore ID wide enough to enable Clean Out BHA on HQ pipes to be run into HWT and the packer bore ID).

The Result:

IPI's solution generated the operator substantial savings by allowing the customer to effectively clean out the well bottom sump from the accumulated coal fragments, its now the operator tool solution of choice for coal clean out. The Progressive Cavity Pump installed successfully at the target depth after well clean out run.

"This method has been used twice now with 100% success to clean all the cuttings/fines from the sump, the Packer came out of the well without any damage and will be redressed and run on our next CBM well" - Project Manager.

