



Dynamic Freeze - Live Well Workover

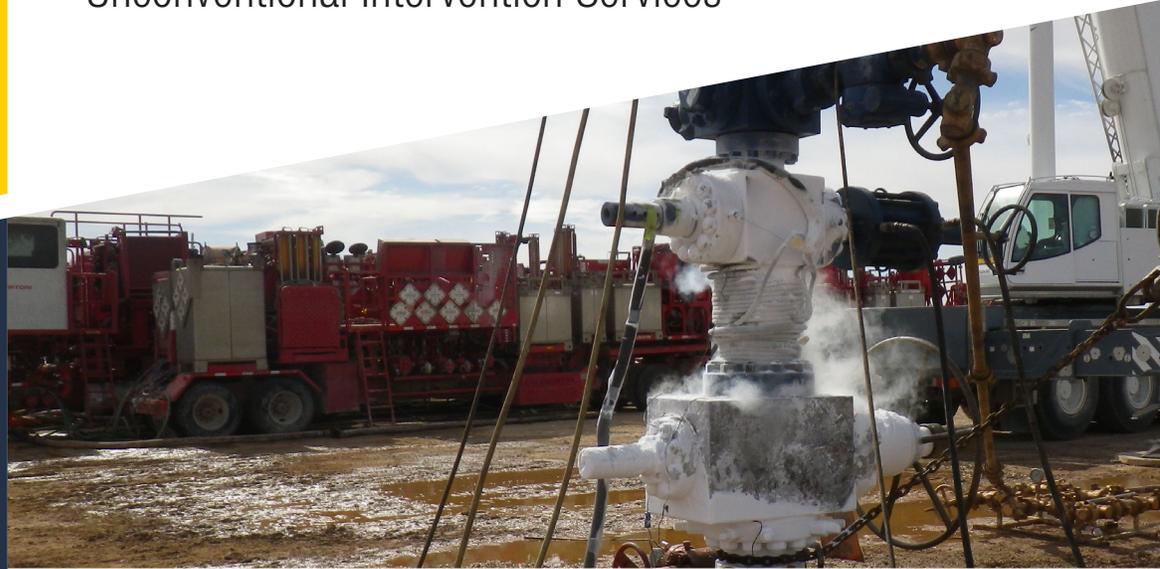
Unconventional Intervention Services



WELL CONTROL

LOCATION

MENA Regional Client



THE CHALLENGE

Wild Well was recently contacted by a MENA regional client who was facing challenges in achieving a double barrier to the wellbore that would allow them to perform a live-well workover on a gas well. The OEM's equipment design utilized a single barrier tubing hanger seal that was standard issue for the era when it was installed. While single barriers may have been acceptable in the past, they do not meet the standards of our client's HSE compliance and their well integrity requirements of today.

THE SOLUTION

As our client's, entire workover program was dependent entirely on achieving an additional gas-tight barrier to isolate the wellbore. We worked closely with them to explore the limited options available. Through Wild Well Control's review, and technical evaluation, the use of a freeze plug was presented to the client, and their approval was issued as the preferred technical solution to fulfill the objectives that they had set. The additional challenges Wild Well Control faced with this gas well was that it included packer-less completions and depleted formations that could not bear being killed and were not capable of holding a column of fluid that would be required in conventional methods of freezing. Utilizing the experience of Wild Well Control's Unconventional Intervention Services team, along with incorporating some new industry technology and techniques, a Dynamic Freeze plug using Helical coils and Liquid Nitrogen was the technical solution provided.

THE SOLUTION

Operations commenced with a specific portion of the wellhead chilled to cryogenic temperatures, and controlled amounts of freshwater were introduced into the live gas-charged tubing and casing annulus. The water was then pumped into the annulus on a set schedule, and a portion of the pumped water would then freeze each time the water was introduced a portion of the ice plug was made until eventually a gas-tight ice plug was formed. Only after both a positive and a negative pressure test had been performed was the client provided with the assurances that they now had double barrier isolation from the wellbore and that the pressure control equipment could be replaced to facilitate the next steps of their live-well workover schedule.

The work scope was completed safely, on time and within the budget parameters set. Wild Well Control's, performance on this project has since led to a multi-well campaign covering a similar scope being awarded to Wild Well Control from the client.

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