

Renaissance® WDCL Safety Valve System

Saves Inoperable Well and \$14 Million in Rig OPEX, Restores Production of 2,000 bbl per Day

Objectives

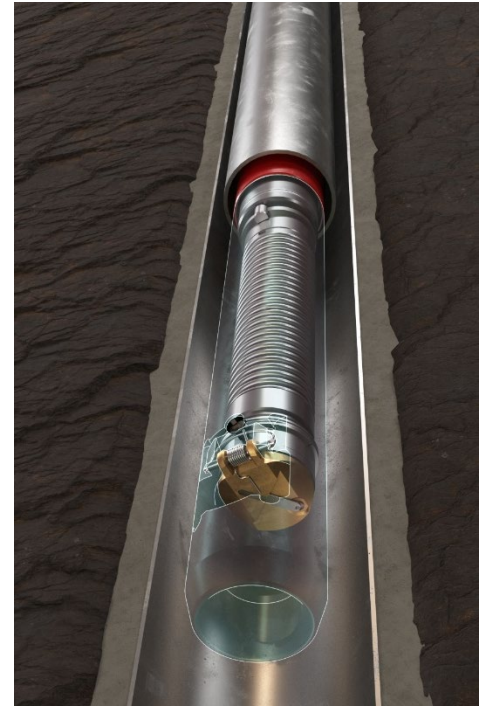
- Restore production to an oil well that was shut-in due to a damaged safety valve, deeming the control line inoperable. Due to the extensive cost and time required to bring a workover rig to recompleting the well, the system was declared uneconomical to recover at the current time. This condition was based on an industry standard in the area requiring a pressurized balance-flow valve to be used only as an intermediate solution. This is because they are not failsafe when closed and rely on a flow-regime change in order to secure the well.
- Devise an alternative safety-valve solution that would not require a costly, workover rig to pull and replace the completion tubing.

Our Approach

- Weatherford well-services engineers met with the operator to investigate options for replacing the safety valve, control line, and injection line. A detailed analysis of the well, completion, and wellhead was collected and reviewed internally with engineering to implement the WDCL (Weatherford Damaged Control Line) system and retrofit the existing completion without compromising the functionality of the lower master valve. This tactic involved a custom application of the surface control-line hanger to be sealed inside the RenGate™ valve and allow the new control line to be suspended at surface. A downhole safety valve, fitted with a hydro-connect stinger assembly and a WidePak™ anchor system, was also engineered to retrofit inside the existing completion—sealing the existing tubing-retrievable safety valve.
- The rigless operation was performed in two separate phases, both of which were safely executed within the live well-environment and utilized a capillary system that was deployed from a standard barge. Phase 1 secured the surface installation, testing, and commissioning of the RenGate valve onto the existing wellhead. Phase 2 installed the sub-surface systems which were comprised of the WDCL safety valve, anchor system, stinger assembly, control line, and control-line hanger—all of which were conveniently installed via capillary-deployment system.

Value to Customer

- The well was successfully brought back online, producing over 2,000 bbls per day with added confidence of housing a true, failsafe surface-control line operating through a retrievable safety valve.
- The rigless solution involved a minimal environmental footprint that was estimated to save the operator approximately \$14 million in OPEX. This approach avoided high workover costs that would have involved a heavy rig for the completion-string recovery and replacement.
- With no workover rig, fewer personnel were needed at the wellsite, thus reducing HSE exposure and risks associated with wellsite operations.



The Weatherford Renaissance WDCL surface-controlled safety shut-in system enables replacement of the control line and safety valve without a workover rig. Advanced valve technology provides an integrated, single-source approach to renew wells suffering from safety-valve-related problems including damaged control lines.

LOCATION

United Arab Emirates

WELL TYPE

Offshore, Oil

HOLE SIZE

4-1/2 in.

DEPTH

341 ft (103.94 m)

PRODUCTS/SERVICES

- Renaissance WDCL safety-valve system
- RenGate modified master-valve
- WidePak anchor system
- Hydro-connect stinger assembly

