

Renaissance® WDCL System Restores Oil Production to Original Rate in 3 Wells While Saving \$20 Million In Remediation Costs

Objectives

- Restore oil production to the original rate—without using a rig or workover unit—in three wells that could not be produced because the surface-controlled subsurface safety valves (SCSSVs) were leaking.
- Eliminate the requirement to produce the wells through a subsurface-controlled ambient safety valve.
- Avoid adding spool, modifying the current wellhead configuration and flowline height, or significantly restricting flow during the workover.

Our Approach

- Weatherford recommended using the Renaissance WDCL (Weatherford damaged control line) system to install a new SCSSV in each well. The team deployed the rigless system using slickline and capillary units.
- Weatherford used the Ren Gate™ wellhead-penetration conversion kit to retrofit the wells without removing the wellhead or modifying the current configuration. Using the Ren Gate kit also eliminated the need to add spool.
- The team installed the Weatherford Optimax™ SCSSV using two methods. In Well 1, they used the eclipse-retrievable (ER) packer assembly that included the SCSSV as a hanging device. In Wells 2 and 3, they used a lock mandrel that included the SCSSV as a hanging device.
- By applying hydraulic pressure on the control line from the platform control panel down through the Ren Gate kit, the team held the SCSSV flapper open in each well and avoided flow restrictions.
- Once the newly installed SCSSVs passed field tests, the platform regained control over the wells, and they resumed production.

Value to Customer

- By using the Renaissance WDCL system to install new SCSSVs, the operator restored oil production to original rates in each well.
- The operator saved US \$20 million, along with significant rig time, by avoiding the use of a rig or workover unit.



The Renaissance WDCL system replaced a leaking SCSSV in three wells without using a rig or requiring major workovers. The operation restored oil production to original rates in the three wells and saved US \$20 million.

LOCATION
Malaysia

WELL TYPE
Offshore, deviated, oil

SETTING DEPTHS

- Well 1: 1,148 ft (350 m)
- Well 2: 479 ft (146 m)
- Well 3: 468 ft (143 m)

PRODUCTION RATES

- Well 1: 200 B/D (31.8 m³)
- Well 2: 400 B/D (63.6 m³)
- Well 3: 800 B/D (127.2 m³/d)

PRODUCTS/SERVICES

- Renaissance WDCL system:
 - 2.813-in. Optimax safety valve
 - 3 1/2-in. Stäubli wet connector and stinger assembly
 - 3-in. RQXC control-line hanger
 - 1/4-in. capillary string services
 - 3 1/2-in. ER packer
 - 2.813-in. WX lock mandrel
 - 3 1/8-in. Ren Gate wellhead-penetration conversion kit to lower master valve

