



## CASE STUDY

# TDP-NonEx for Underground Gas Storage application

## Product

### TCO TDP-NonEx

## Challenge

At a location in Italy, two wells were planned and drilled by operator Edison Stoccaggio for Underground Gas Store applications.

The operator wanted to develop an intervention free well completion design to minimize the use of slickline and coiled tubing during completion operations. This was due to a challenging well path with inclination between 65°-70°. To achieve the goal, the operator needed to set a deep, V0-rated barrier plug before removing the Blowout Preventer and installing the Christmas tree.

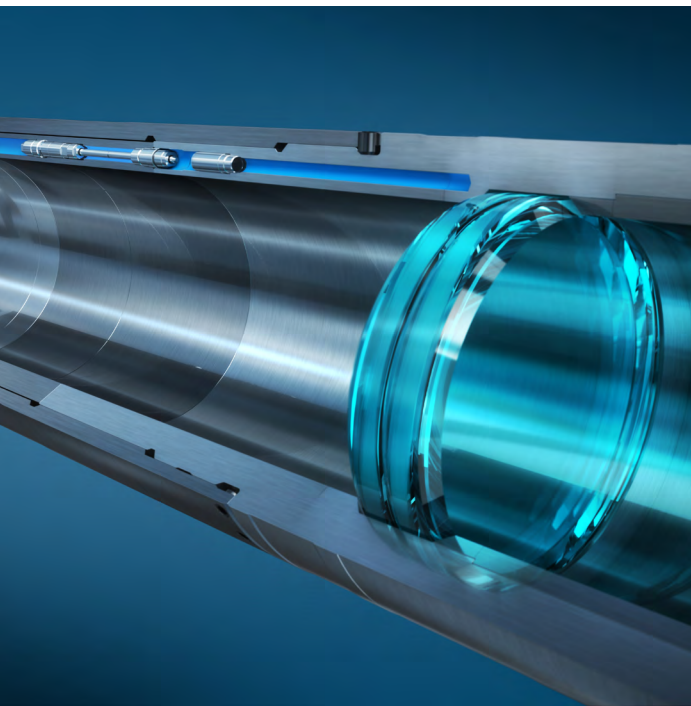
## Solution

The operator and the main completion service company jointly selected a TDP-NonEx Tubing Disappearing Plug manufactured by TCO to be installed in the completion tail pipe. This enabled setting of the production packer against the TDP glass disk, an ISO14998 V0 certified barrier, and to have this barrier in place during BOP removal and Xmas Tree installation. Additionally, the plug also allowed underbalanced well conditions, ready to be cleaned-up.

The V0 rated plug can withstand up to 7500 PSI differential pressure without letting gas or fluids pass. With a balanced cycling mechanism and non-explosive opening mechanism, the plug was easily transported, handled, and deployed in the well. No pre-planning was needed in terms of cycle setup. The handling, installation and cycling could all be done by the main service provider and operator.

"We truly value your support received on technical and supply chain topics and indeed we consider this achievement a milestone in UGS well completion design to minimize intervention operations."

— Edison Stoccaggio





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## Result

The TDP-NonEx plugs were successfully installed in both UGS workover wells and later remotely opened with 12 pressure cycles as per plan. Pressure cycles were performed with a Triplex Pump equipped with digital pressure recording devices. By design, full bore access was gained after opening and the wells were set to flow.

Strong collaboration from the early engagement led Edison Stoccaggio and the main completion service company to achieve a record. As the first application of this type in Continental Europe, more than three operating days for each well were saved and all the potential operating risks associated with slickline, and coiled tubing operations were eliminated.

## Highlights

- Intervention free well barrier deployment and removal.
- Successfully installed and remotely cycled open.
- Full bore access.
- Strong collaboration between TCO, Main Service Provider and Operator.

