

Case Study:

Isolation of gas breakthrough with retrievable completion string

Application of Retrievable SwellRight Packers on offshore platform in Caspian Sea

Well Data

Location: North Caspian sea, Russia

Well Type: Oil producing horizontal well

Pressure Rating: 3000psi

Temperature: 80°C



During production of horizontal wells, LUKOIL was met with gas breakthrough in the heel zone of the wells. Application of a retrievable completion string was planned to isolate such zones and allow a design change of the recompletion string if deemed necessary in the future. The challenge was to isolate gas breakthrough zone(s) of the horizontal wells by using a retrievable completion string.

Tendeka Solution

In order to allow the retrieval of the recompletion string, Tendeka recommended installing a retrievable design of swellable packers. According to formation data, water and oil SwellRight retrievable packers were recommended to the client.

Tendeka designed both oil and water 3.50" retrievable packers for sealing inside 6-5/8" and 5-1/2" casing. Tendeka successfully undertook a qualification program to confirm pressure holding capability, prior to the installation of the packers.

Project Results

Recompletion was successfully completed within the timeframe of workover jobs on these wells. The workovers performed on the two wells provided the increase in oil flow rate by 184% and 40%, and the reduction in water cut by 28% and 15% respectively. GOR in the first well increased by 25% (supposedly as a result of a new gas breakthrough zone), while in the second well it decreased by 41%.

- Gas breakthrough zones have been successfully isolated
- Oil production has been recovered
- Possibility to retrieve retrofit completion has been provided

This project has been acknowledged successful and as a result Tendeka Retrievable SwellRight Packers will be recommended for utilisation to all sister companies of the client.

