Case Study

ICEFIELD ENERGY

Successful real-time orientations of perforating guns in an HPHT environment.

Summary

An Operator faced the challenge of perforating a well across multiple zones in an HPHT environment without causing any damage to a fiber optic cable located on the outside of the casing. To address this, they needed a gyroscopic system. Given that the well was vertical, a gyro system was their only option to obtain accurate toolface measurements.

Location

- Onshore - Middle East
- Oman
- Vertical Oilfield Services

Well Details

- Depth: 5,000m to 5,200m
- Temperature:150 Degrees C.
- Pressure: 15,000 PSI

Objective

Detect the fiber optic cable behind the casing using a third party electro-magnetic imaging tool and its' orientation with an Icefield Energy gyro system, change the toolface of the guns and then fire them at 180 degrees opposite to the cable position. Repeat this across multiple zones.

Technology Used

Third party electro magnetic imaging tool, and a solid-state CVG gyro system provided by Icefield Energy.

Results & Value Created

The gyro system ensured that the perforation guns were oriented 180 degrees opposite to the position of the fiber optic cable ensuring the eight zones were successfully perforated with no fiber optic cable damage. Icefield Energy's solid-state CVG gyro tool performed flawlessly throughout this high temperature and high pressure operation, avoiding any failures. This achievement not only prevented costly gyro repair and damage expenses but also safeguarded the fiber optic cable. Without this success, a costly recompletion of the well would have been necessary.