ForeSite® Sense Reservoir Monitoring
Eliminates Failures in 7 HPHT, Deepwater Wells,
Provides 6 Years’ Reliable Service and Counting

Objectives

- Install sensors in seven high-pressure, high-temperature (HPHT) wells within Gudrun Field and comply with its strict operating requirements for all in-well components.
- Enable reliable, long-term monitoring within HPHT wells sustaining temperatures and pressures up to 275°F (135°C) and 11,313 psi (78 MPa).

Our Approach

- After a thorough pre-job analysis, a Weatherford team recommended ForeSite Sense reservoir-monitoring solutions. This included ForeSite Sense optical pressure and temperature (P/T) sensors, which deliver real-time reservoir data and tolerate temperatures in excess of 446°F (230°C) and pressures in excess of 20,000 psi (137.9 MPa). The optical sensors eliminated the in-well electrical components, which are susceptible to failure over time in HPHT conditions.
- The Weatherford team ran the sensors downhole on the ForeSite Sense optical cable, which was clamped to the 5-1/2-in. tubing. The sensors were set at depths between 13,451 and 18,701 ft (4,100 and 5,700 m) measured depth (MD) across all seven wells.
- The team equipped all surface wellheads with ATEX-approved and API 16FB-qualified optical outlets—tested to 15,000 psi (103.4 MPa)—which transmit data from the optical in-well fiber to the surface cable. The surface cable then transmits data to the ForeSite Sense data-acquisition unit for analysis.

Value to Customer

- Since installation in 2014-2015, the ForeSite Sense reservoir-monitoring system has enabled the operator to monitor reservoir pressure and temperature continuously in real-time. This consistent stream of data helps optimize production and maintain well integrity over the life of each well.
- The optical sensors have been fully operational in the harsh, HPHT conditions with zero failures to date.