

CASE STUDY

GYROGUIDE MITIGATES WELLBORE COLLISION RISK WITH HIGH-ACCURACY SURVEYS INSIDE PRODUCING WELL

▶ TECHNOLOGY

- GyroGuide™ gyro surveying system

▶ APPLICATION

- Wellbore placement
- Collision risk mitigation

▶ LOCATION

- Indonesia

INDUSTRY CHALLENGE + OBJECTIVE

An operator in the East Kalimantan province of Indonesia needed to survey a well to determine its exact position due to expected wellbore collision risk with adjacent wells. However, the well was already flowing, with gas production at 125 Mscf/d and oil production at 647 BOPD. In a normal operation, the well would have to be shut-in while gyro operations were performed, as flow or downhole movement could negatively impact the gyro survey results. Nonetheless, the operator requested that we conduct gyro surveys without shutting in the well to ensure that the production rate was not reduced.

TECHNOLOGY + SERVICE SOLUTION

- Our GyroGuide gyro surveying system provides high-accuracy wellbore placement with positional, orientation, steering, and continuous surveys.
- The system communicates to surface in real time via electric wireline.
- Gyro sensor technology, electronics, and housing design allows the tool to be run in most tubing, drillpipe, and casing sizes (down to 1.9 in.), as well as in an extensive range of pressures and temperatures.

RESULTS + VALUE DELIVERED

- Under normal circumstances, surveying inside a flowing well would not have been possible.
- In partnership with the operator and our Technical Support team, we developed a system configuration specific to this scenario that would minimize the effects of vibration and other downhole dysfunctions on the gyro sensors.
- We successfully surveyed the well with our GyroGuide system on wireline from surface to 4,900 ft while the well was still flowing, monitoring real-time data throughout the operation to ensure that there were no issues with vibration that would damage the system or invalidate the survey data.
- Despite the well flowing, conditions were managed and it was not necessary to shut-in the well at any point during the surveying process, allowing the operator to obtain high-accuracy wellbore placement and collision risk mitigation information without restricting production.

