CASE STUDY

GYROGUIDE REVEALS DISCREPANCY IN COMPETITOR SURVEY THAT CAUSED WELLBORE COLLISION

TECHNOLOGY

- GyroGuide™ gyro surveying system
- Javelin-GWD system
- SPEAR™ solid-state sensor technology

APPLICATION

- Real-time wireline gyro survey
- Real-time gyro while drilling (GWD)

LOCATION

- Appalachian Basin, PA

INDUSTRY CHALLENGE + OBJECTIVE

A large operator was drilling in the intermediate section of a well on a multi-well pad. At approximately 1,600 ft., the anti-collision surveys obtained from a discount survey provider on a past run, indicated that there were no concerns based on the wellbore position of an existing well. As the operator drilled ahead, they suddenly started having torque and drag issues along with several other red flags including the presence of metal shaving in their returns.

To determine what had happened downhole, the operator requested that we perform a survey with our GyroGuide system. If a wellbore collision had occurred, the operator would also need to implement a GWD system to accurately drill and place the new well.

TECHNOLOGY + SERVICE SOLUTION

- Our GyroGuide gyro surveying system provides high-accuracy wellbore placement with positional, orientation, steering, and continuous surveys.
- GyroGuide technology is capable of running up to 250 ft/min in continuous mode from vertical to horizontal while traversing in or out of the well.
- The Javelin-GWD system, powered by SPEAR solid-state sensor technology, has been specifically designed for standard tophole kick-off environments and is more efficient and reliable than competing spinning-mass GWD systems.
- The Javelin-GWD system only takes 2 min 30 sec to collect a survey, which is up to 2 min faster per survey than competing gyroMWD and legacy GWD systems.

RESULTS + VALUE DELIVERED

- After running our GyroGuide system to investigate what had happened, we confirmed that a wellbore collision had occurred due to the initial use of low-quality survey data. The collision resulted in major downtime, as well as the cost of cementing back, redrilling, and redirecting the new well. Additionally, the operator had to deal with costly damages and repairs to the existing well.
- The operator used our Javelin-GWD system as the directional MWD to help them drill the new well in the correct direction with no magnetic interference, leading to proper bottomhole location and well placement.
- Had the operator chosen to run a high-quality gyro survey in the first place, it would have saved significant time and capital versus the risk of implementing a less expensive, lower quality solution. Potential savings in this instance would have been well over $100,000, including the cost of running our system.

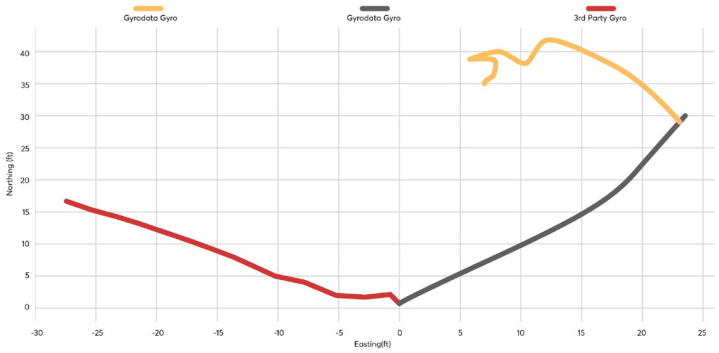

Fig. 1—GyroGuide was run on a wireline truck to survey the existing well and the newly drilled well. The operator initially thought that the well was 52 ft away from its actual location based on the competitor data, as shown by the red survey line. This discrepancy led to the wellbore collision and associated costs and downtime.

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