CASE STUDY

HIGHLY ACCURATE OMEGA^{X}™ GYRO SYSTEM CORRECTS THE WELLBORE BOTTOM HOLE LOCATION BY 434 FT

TECHNOLOGY

– Omega^{X}

APPLICATION

– Lateral Section Drilling

LOCATION

– Utica Shale

INDUSTRY CHALLENGE + OBJECTIVE

While drilling an extended lateral section on a North American land rig, detection issues were encountered with the MWD equipment while drilling the 8½-in. hole section to approximately 30,580-ft MD. The wellbore was drilled to TD, but there were significant gaps in the survey data of up to 500 ft as a result of the MWD problems. The operator originally proposed a continuous wireline gyro survey to fill the gaps and reduce the ellipses of uncertainty over the whole wellbore but ultimately chose the Omega^{X} system instead.

TECHNOLOGY + SERVICE SOLUTION

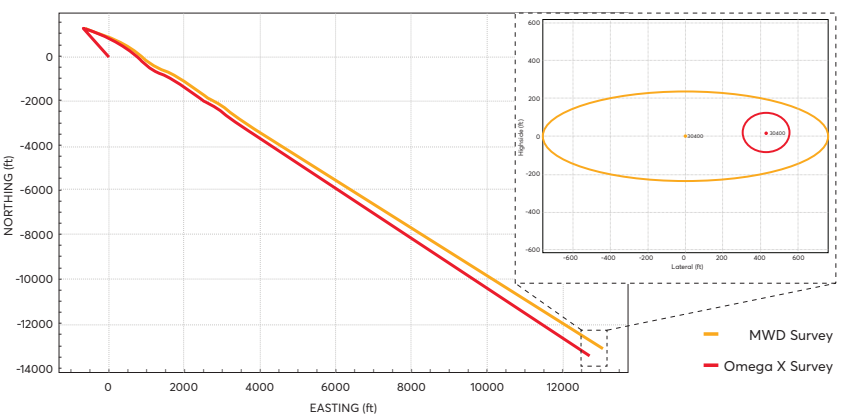
- Powered by our SPEAR™ solid-state gyro technology, the Omega^{X} system was chosen for its ability to provide more accurate wellbore placement and improved reliability versus previous solutions.
- The Omega^{X} survey eliminated a dramatic amount of survey time versus an equivalent wireline run, which would have taken approximately 16 hours including rig-up and rig-down.
- The Omega^{X} survey highlighted a declination error of approximately 0.7° from the MWD equipment, which was confirmed by a third-party review of all survey data collected.
- This resulted in a lateral difference of 433.8 ft between the Omega^{X} and MWD surveys.

RESULT + VALUE DELIVERED

- Using the Omega^{X} system saved rig time, required fewer people onsite, and reduced HSE risk by eliminating the need for wireline. In addition, using the system reduced the ellipse of uncertainy by 77%, revealing that the wellbore had not been placed accurately as noted in the original MWD survey. The operator also used the survey data to identify a declination error in the original MWD surveys, further highlighting the need for a new solution to take better, more accurate surveys to optimize wellbore placement.

ELLIPSE OF UNCERTAINTY COMPARISON

Gyrodata Omega^{X} vs MWD Survey



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