

# SURVEY MANAGEMENT

Today's drilling projects require precise well placement to optimize production and reduce risks associated with collision. Our industry leading survey management services enhance the accuracy of your downhole surveys and tighten survey tolerances, increasing the certainty and precision of wellbore placement. This is vital when pay zones are tight, boundaries are close or when trying to maximize well spacing when pad drilling.

- ▶ Our services include: MSA, SAG, 5-Axis and In-Field Referencing (IFR)
- ▶ Our in-house survey management center provides 24-hour monitoring and real-time corrections
- ▶ All survey management techniques comply with the highest industry standards
- ▶ All personnel are Industry Steering Committee on Wellbore Survey Accuracy (ISWCWA) certified
- ▶ Survey corrections can be provided on any well regardless of directional provider or MWD system

## BENEFITS

- ▶ Enhance wellbore survey accuracy
- ▶ Mitigate collision risk
- ▶ Improve well spacing for pad drilling
- ▶ Drill longer laterals
- ▶ Prevent trips
- ▶ Reduce costs related to gyro operations
- ▶ Improve well drainage
- ▶ Improve TVD control
- ▶ Smoother less tortuous wellbore

## WHAT IS MSA?

Multistation analysis (MSA) is recognized as the most robust and accurate quality control method for minimizing systematic errors from MWD survey measurements. Applying MSA corrections to surveys in real-time reduces the effects of drill string magnetic interference and minimizes raw 6-sensor data errors.

## ELLIPSE OF UNCERTAINTY (EOU)

