

OBJECTIVES

- Determine impact of survey errors on well spacing
- Determine well placements without survey correction applied
- Determine if uncorrected surveys would have affected the completion, the production or a possible well collision

SUPERIOR QC SOLUTION

Survey FDIR (Fault Detection, Isolation, and Recovery) is the next generation replacement for multi-station analysis survey correction technology. It is used to identify gross survey errors and reduce your MWD Ellipse of Uncertainty (EOU) while drilling. It yields the most accurate well-to-well spacing available from MWD survey data.

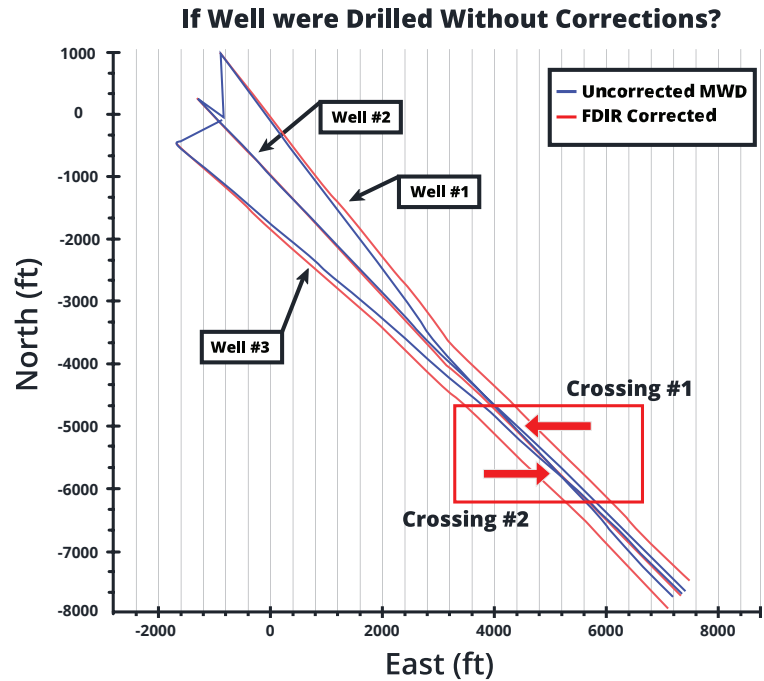
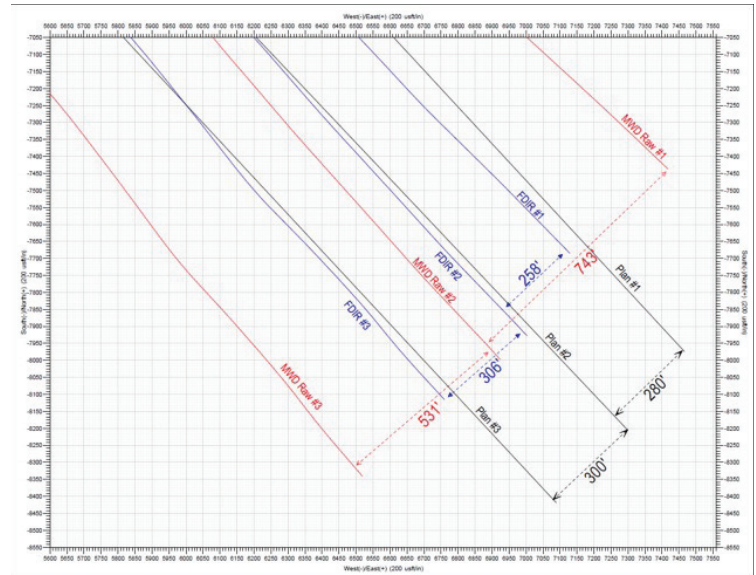
SUPERIOR QC RESULTS

Figure 1 Shows without FDIR survey correction using only raw MWD surveys there was a 710' spacing error.

Figure 2 Shows without real-time FDIR survey corrections, wells 1 and 2 would have crossed at 4000' into the lateral and wells 2 and 3 would have crossed at 5100' the lateral.

The well crossings would also have been within 15' TVD of each other, avoiding possible well collision.

Real time FDIR survey correction made a significant improvement the completion, the production and the anti collision risk on this pad.



Past performance is not a guarantee of future results. Results may vary.