

Case study: Middle East

AutoTrak eXact RSS delivered record ROP, run length, and pay zone footage in challenging formation run

A customer in the Middle East was drilling in a field with hard and abrasive sand and siltstone. The challenging formation was causing torsional stick-slip, slow rates of penetration (ROP) and high wear and tear on the bottomhole assembly (BHA) and other drilling equipment.

Faced with ever-increasing well construction costs, the customer contacted BakerHughes for a solution that would maximize drill bit life and run length on their next well which would be highly deviated and was targeted to reach a total depth (TD) of 21,548 ft (6568 m).

After careful review of the well plan, the customer and the Baker Hughes drilling teams selected the 4½-in. **AutoTrak™ eXact rotary steerable system (RSS)** because its technical capabilities best matched the operational requirements for the deep, highly-deviated well.

The AutoTrak eXact system maintains a continuous proportional steering vector throughout drilling operations using three precision-controlled pads mounted on a slow-rotating sleeve. This steering principle is unique to AutoTrak systems, and delivers smooth, in-gauge holes, exact well placement, and faster, more reliable drilling performance.

Despite the challenging conditions and highly-deviated well path, the AutoTrak eXact system established multiple records for the field by drilling 7,018 ft (2139 m) of payzone—including a single run of 2,442 ft (744 m)—quickly and efficiently with three fewer trips than the lowest number of trips on competitor offset.

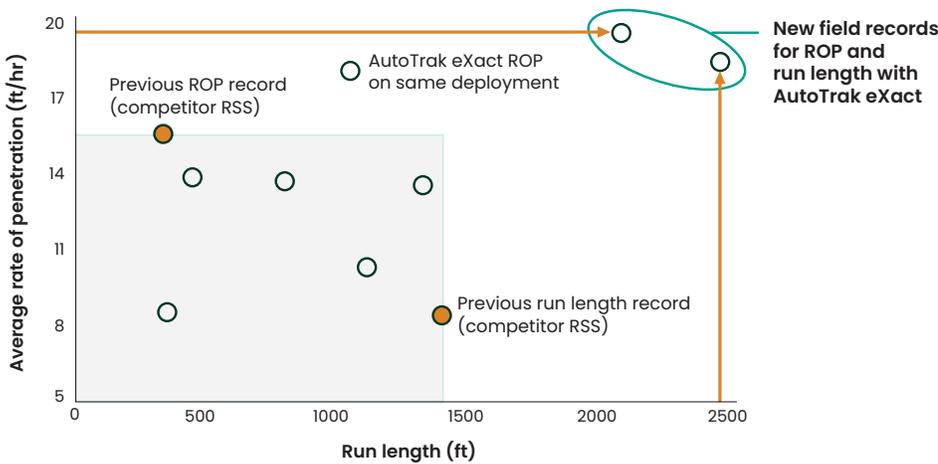
Because AutoTrak systems use internal hydraulics to power the independent steering pads, their steering control is not affected, by drilling dynamics or

Challenges

- Hard, abrasive sand and siltstone was causing significant downhole tool wear
- Deep, highly-deviated well
- Sub-optimal ROP on several offset wells

Results

- Drilled challenging, high-angle well profile
- Established multiple field records for ROP, run length, and fewest trips
- Minimized bit and BHA wear in challenging drilling environment



Using an AutoTrak eXact system, an operator in the Middle East set three new records while drilling a highly deviated well path through a challenging formation.

artificially restricted by flow rates, and drilling fluid properties. This flexibility allowed the customer to match the bit design to the formation challenges.

On a subsequent well, the AutoTrak eXact system used continuous proportional steering to push the field's benchmark performance further by:

- Drilling up to 5% faster than the best offset.
- Extending the average run length by up to 15%.
- Achieving 7,296 ft (2224 m) of pay zone exposure.
- Drilling a single run of 2,790 ft (850 m).

