

**Case study:** Marcellus basin, United States

# Record-setting ERD well drilled via Remote Operations Services

As the largest natural gas producer in the country, EQT Corporation owes its success to innovative drilling technologies that produce prolific results. Another important component of that success is partnering with Baker Hughes to leverage its Remote Operations Services to ensure high-quality, efficient and consistent performance. Because of a long-standing relationship, the two companies collaborated on a plan to drill a complex extended-reach (ERD) well in the Marcellus basin, knowing it would be a challenge that would reap big rewards.

ERD well design is an integrated process that requires an optimum well path profile with respect to torque and drag. That was an additional challenge for this particular EQT well—minimizing well tortuosity to avoid high torque and drag.

The high-performance drilling package chosen by Baker Hughes for this operation included the **AutoTrak™ Curve rotary steerable system (RSS)** and the **Navi-Drill™ Ultra XL motor**, which provided a smooth wellbore while decreasing torque and tortuosity. The **Talon™ PDC drill bit** reduced torsional and lateral vibrations, avoiding excessive drilling dysfunctions. Finally, the

integrated processes between **Fluids Environment Services (FES)** and **CARBO-DRILL™ oil-based drilling fluid** led to efficient hole cleaning and cuttings removal, while providing enhanced lubricity from our tailored fluid system.

The Baker Hughes and EQT teams collaborated to break the record for drilling the longest single-run ERD well in the northeast—a total of 20,302 ft (6188 m)—as part of a completely remote drilling operation. This run is also a global ERD record for the AutoTrak Curve RSS.

A remote team of Baker Hughes directional drillers and MWD engineers drilled this record-breaking well from 5,618 ft (1712 m) to a total depth of 25,920 ft (7900 m) in under eight days. EQT's geology team and the Baker Hughes remote team collaborated to achieve a total in-zone percentage of 95.5%.

This achievement showcases Baker Hughes' and EQT's great teamwork to deliver record-breaking performance.

Two years later, Baker Hughes remains the only company capable of consistently delivering this kind of performance without a single field service engineer on the rig.

## Challenges

- Drilled a complex three-dimensional ERD well
- Minimize overall well tortuosity to avoid high torque and drag

## Results

- Drilled longest single-run ERD well— a total of 20,302 ft (6215 m)
- Delivered entire operation through remote services, requiring no directional drilling, MWD or LWD personnel at the rig site
- Saved a minimum of 12 operational hours in trip time
- Enabled EQT to achieve 95.5% accuracy and stay in the targeted production zone