

Redefining Drilling Speed

Magnus® Saker RSS Delivers 70% ROP Above Target in Complex Carbonate Formation

Objectives

- Drill and complete a horizontal water injector well into the carbonate reservoir with 4 1/2-in. upper and lower completions.
- Maintain precise geosteering within a narrow reservoir target window.
- Achieve strict KPIs for rate of penetration (ROP) and reservoir-quality wellbore.

Our Approach

- Deployed 4 3/4-in. Magnus Saker rotary steerable system (RSS) for responsive steering and low tortuosity.
- Integrated triple-combo LWD geosteering suite (gamma, resistivity, density/neutron/density image) for real-time trajectory adjustments and reservoir evaluation.
- Optimized drilling parameters through real-time monitoring to mitigate dysfunction and maximize efficiency.
- Streamlined connection, surveying, and downlinking procedures to reduce weight-to-weight connection times.

Value to Customer

- Improved ROP by 70% over KPI of 80 ft/hr (24.3 m/hr), approximately 45% over rig historical averages achieved in a carbonate zone with unpredictable layers and restricted spaces, requiring precise control. High-torque drive and responsive steering system enabled efficient progress through these challenging intervals.
- Set new weight-to-weight record for well-to-well connection time at 8.85 minutes compared to the field average of 14.8 minutes, critical in an environment where variability and tight spots can increase nonproductive time (NPT). Rapid downlinking capability and streamlined connection process accelerated operations.
- Maintained accurate wellbore placement fully inside the carbonate reservoir with minimal tortuosity, overcoming the challenge of narrow reservoir targets and unpredictable layers. Precise directional control and continuous geosteering integration ensured maximum reservoir exposure and reduced completion risks.
- Ensured 100% system reliability across all runs with zero RSS-related flat time or failures, delivering consistent performance in demanding conditions where tool durability is essential for avoiding costly downtime.



Fully ruggedized from end to end, the Magnus Saker RSS is engineered for the harshest drilling environments, delivering exceptional reliability and control in high-temperature, high-shock conditions.

LOCATION
Middle East

WELL TYPE
Development, injector, horizontal, land drilling rig

FORMATION
Carbonates

PRODUCTS/SERVICES

- Magnus Saker RSS
- AZD™ azimuthal density sensor
- TNP™ thermal neutron porosity sensor
- MFR™ resistivity tool
- HEL™ hostile-environment-logging measurement-while-drilling system

