

SeismicTrak seismic-while-drilling service

Reduce drilling risk and improve wellbore placement

The Baker Hughes **SeismicTrak™ seismic-while-drilling service** provides real-time, seismic first-arrival and waveform data to reduce formation uncertainty, enabling you to hit your reservoir targets under a variety of complex conditions.

SeismicTrak data can be used to update surface seismic models without impeding overall drilling operations. This results in immediate and better-quality information on the reservoir, leading to improved production and recovery.

Used primarily in offshore wells, the SeismicTrak service proves invaluable when faced with velocity uncertainties, pressure transitions, challenging trajectories, or nearby salt bodies.

Real-time data from the SeismicTrak tool enables adjustment of well trajectory as necessary to avoid sidetracks and precisely place the well.

Reduce rig cost through efficient, seismic-enhanced drilling

The SeismicTrak service captures measurements during natural pauses in the drilling process, which are then transmitted to the surface using mud-pulse telemetry. As pipe is added, seismic operations from the surface

engage, and the SeismicTrak tool's downhole receiver acquires formation velocity data with no slowdown to the operation. This eliminates nonproductive time (NPT) with faster data acquisition and reduced rig costs.

Baker Hughes builds in the necessary ruggedness to the SeismicTrak tool so it can withstand the rigors of deepwater drilling. This hardened sub contains redundant geophone and hydrophone sensors, enabling longer runs in harsh, downhole environments without stopping.

In highly deviated, horizontal, or extended-reach wells, the SeismicTrak service can access boreholes that may be difficult for wireline, reducing the need for additional openhole time or the use of risky deployment methods. The system collects real-time checkshot data and full wireline-quality vertical seismic profile data in memory for processing after drilling to increase subsurface understanding.

Reduce uncertainty for enhanced safety

Although surface seismic data is subject to uncertainty, especially in high-risk, sub-salt, and deepwater markets, it still provides the basis for

Applications

- Deep water and pre-salt
- Highly deviated, horizontal, or extended-reach wells
- Seismic uncertainty
- Uncertain casing/coring points

Benefits

- Acquires measurements during natural drilling pauses
- Reduces downtime, improving rigsite efficiency
- Precise clock for checkshot time/depth pairs
- Accurate measurements even when downhole for extended periods of time
- Immediate data-capture feedback during drilling process
- Enhanced wellbore placement
- Reduced depth uncertainty
- Optimal setting of casing point
- Detects pressure changes
- High reliability for deepwater conditions
- Long runs without stopping

the majority of wells drilled today. The SeismicTrak service reduces this uncertainty by showing important reservoir features and potential drilling hazards—in real time—such as faults and pore-pressure regions, to increase safety during the drilling operation.

While drilling, SeismicTrak data will indicate formation changes that are approaching just below the bit to allow safe stops and avoid potential hazards. Surface seismic and SeismicTrak data can be combined to assist in detecting pressure changes, the potential of exiting of the reservoir, or other downhole uncertainties that could jeopardize the run. Well trajectory, mud weight, or casing setting depth can be adjusted to mitigate those hazards.

Optimize well landing with real-time data

During drilling, the SeismicTrak checkshot data is transmitted to the surface to position the well on the seismic map. This real-time seismic data helps optimize operational processes and improve wellbore placement.

Using the most precise clock technology in the industry—with a drift of less than one millisecond over 10 days—the SeismicTrak service can precisely provide time/depth measurement, even when downhole for extended periods. The wavelet processing of reflected data assists in predicting geohazards and features ahead of the bit, as well as landing the well in the sweet spot. Simply landing

the well in the reservoir is not enough—Baker Hughes can optimally place your wellbore for maximum reservoir exposure.

The SeismicTrak service is further enhanced with data processing provided by Baker Hughes borehole seismic experts, who are also engaged in the prewell planning and modeling phase, as well providing the service deliverables. Their invaluable contributions bring optimal job performance and results.

Contact your Baker Hughes representative to learn more about how SeismicTrak seismic-while-drilling services can help you reduce downhole uncertainty and optimize wellbore placement.

