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RESIDUAL MAGNETIC FIELD TESTING ON NON-MAGNETIC DRILL COLLARS

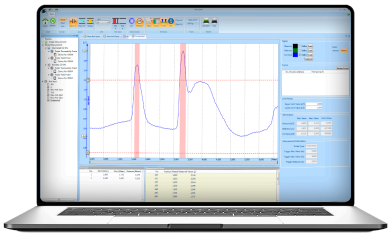
Residual magnetism in non-magnetic drill collars can distort borehole measurements and jeopardize drilling. The residual magnetic field test reliably detects such magnetism before use.

THE CHALLENGE

In directional drilling, drill collars must not influence compass-based navigation systems. Mechanical processing, heat treatment or handling can alter magnetic properties and create local magnetic anomalies ("HotSpots"). According to API Spec 7, deviations must not exceed ±0.05 µT. Precise residual magnetic field testing is therefore essential to ensure drilling accuracy and safety.

THE SOLUTION

Residual magnetic field inspection is performed using MAGNETOSCOP or MAGNETOMAT systems with a differential probe. Measurements can be carried out with either moving probe or rotating drill collar. Differential sensing minimizes environmental magnetic disturbances. Data acquisition and evaluation are supported by MAGDATA HotSpot software with API-compliant reporting.



THE RESULT

The system enables reliable detection of magnetic anomalies within the ±0.05 µT tolerance specified by API Spec 7. Differential measurement improves sensitivity and reproducibility under controlled environmental conditions. Automated data processing and reporting support compliance verification and safe deployment of non-magnetic drill collars in deep-bore operations.

THE PRODUCTS

MAGDATA SOFTWARE

Software Solutions for Data Transfer, Analysis and HotSpot Evaluation

MAGNETOSCOP

Portable Solution For Magnetic Field and Permeability Measurement

MAGNETOMAT

PC-supported magnetometer for measuring magnetic flux density and relative permeability

PROBES AND SENSORS FOR MAGNETOSCOP & MAGNETOMAT

Flexible Solutions for Magnetic Field and Permeability Measurements

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