TECH REPORT

MIDDLE EAST

Background

Drilling in high-pressure zones with rugged terrain requires unique tools that offer creative solutions. Drilling in vertical-slanted wells always comes with challenges related to drilling risk and geological uncertainties. A recent well drilled vertically penetrated a high resistivity reservoir. The well objective was to stop at 20-ft MD before entering the high-pressure formation. The operator expected some degree of uncertainty related to formation top and resistivity properties.

Based on this expectation, the operator initiated a feasibility study analysis to better understand the measurement sensitivity of the electromagnetic technology before undertaking the drilling project. Modeling based on MD was generated as well as a formation model. This helped the operator better understand the drilling dynamic and tool responses relative to each reservoir property.

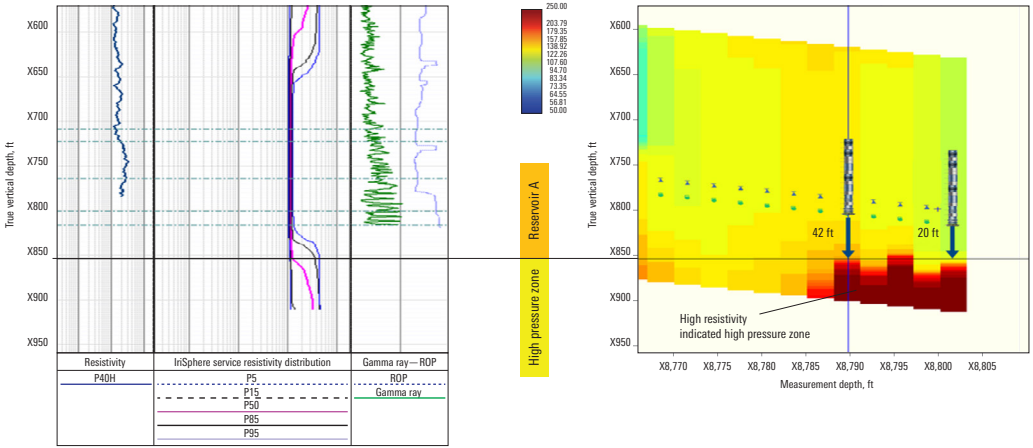
Technology

IriSphere* look-ahead-while-drilling service

Schlumberger

True Look-Ahead-While-Drilling Geo-Stopping Technology Helps Steer Clear of High-Pressure Reservoirs

IriSphere look-ahead-while-drilling service, based on electromagnetic technology, identifies the high-pressure zone ahead of the drill bit



The IriSphere service enabled resistivity ahead of the bit detection 40 ft ahead of the tool and enabled geostopping between 20- to 40-ft MD before entering the high-pressure zone. Based on deep electromagnetic technology, the service was used to accurately pick up the top high-pressure zone ahead of the bit.

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