

Operational Risks

- High-pressure zone
- Stuck pipe
- Fluid loss

Background

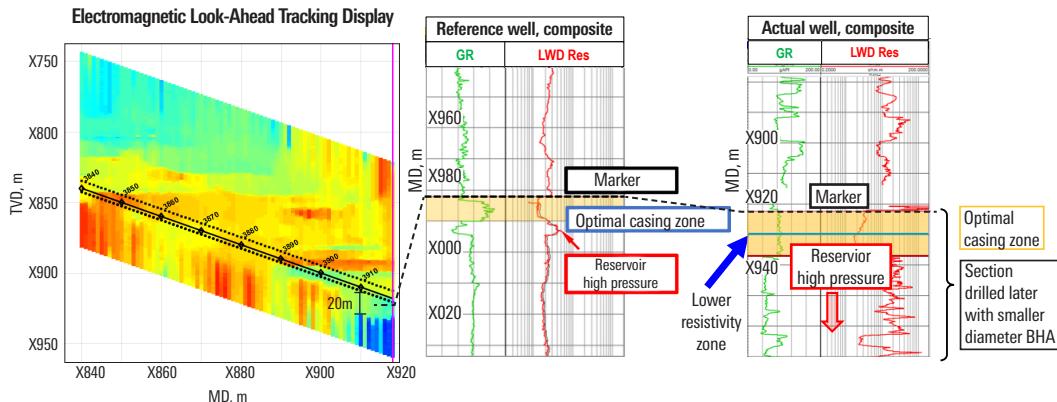
For offshore HPHT exploration wells in the South China Sea, an operator typically relies heavily on surface seismic data for structural depth information. Yet predrill subsurface models exhibit significant uncertainty in formation properties and depth accuracy, which is problematic where lithology and bed thickness are unpredictable. A previous exploration well suffered severe well control problems on penetrating a high-pressure formation. To continue field development, the operator needed to look ahead of the bit to stop above the high-pressure zone, which was characterized by the shale marker above it.

Technologies

- IriSphere\* look-ahead-while-drilling service

# IriSphere Service Successfully Avoids Impending Hazards While Drilling, Offshore China

Look-ahead-while drilling enables operator to select optimal casing point and avert losses encountered with previous wells in treacherous formation



The Schlumberger team understood the operator’s challenges and recommended the IriSphere service. Its continuous look-ahead resistivity technology detected and accurately mapped the target shale marker 20 m [65 ft] ahead of the bit. This enabled the operator to correctly set casing depth to isolate the lower pore pressure and fracture strength formation from the high-pressure reservoir sand. Not only did this first use of IriSphere service offshore China successfully avert previous hazards encountered, it is now preferred technology in that specific field.

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