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CASE STUDY: THROUGH CASING SATURATION TECHNOLOGY

Problem Statement

Well was completed as an oil producer in the lower sand below a shale barrier. To confirm if the oil had moved up as predicted, QUAD neutron is to be performed through tubing and casing, preceded by a cleanout trip, and logging job is to be completed over the selected interval in two passes to ensure data repeatability.

Findings

To achieve well objective, saturation logging was conducted through casing over an upper unperforated section of sand in real time mode using tractor delivery method.

Simulation studies indicated that oil had been pushed up with water injection from a down dip water injector and that the upper sand should now be oil saturated.

Upon comparing the saturation log to the pre-production saturation log, it was evident that the oil saturation had increased as predicted. Following the perforation and subsequent flow-back of the upper zone, the simulation studies were validated, showcasing an elevated oil saturation level. Post-perforation test results revealed an increase in the oil production rate from 2400 bopd to 3934 bopd, alongside a reduction in water cut from 40% to 26%, with no signs of free gas production.

Benefit & Added Value

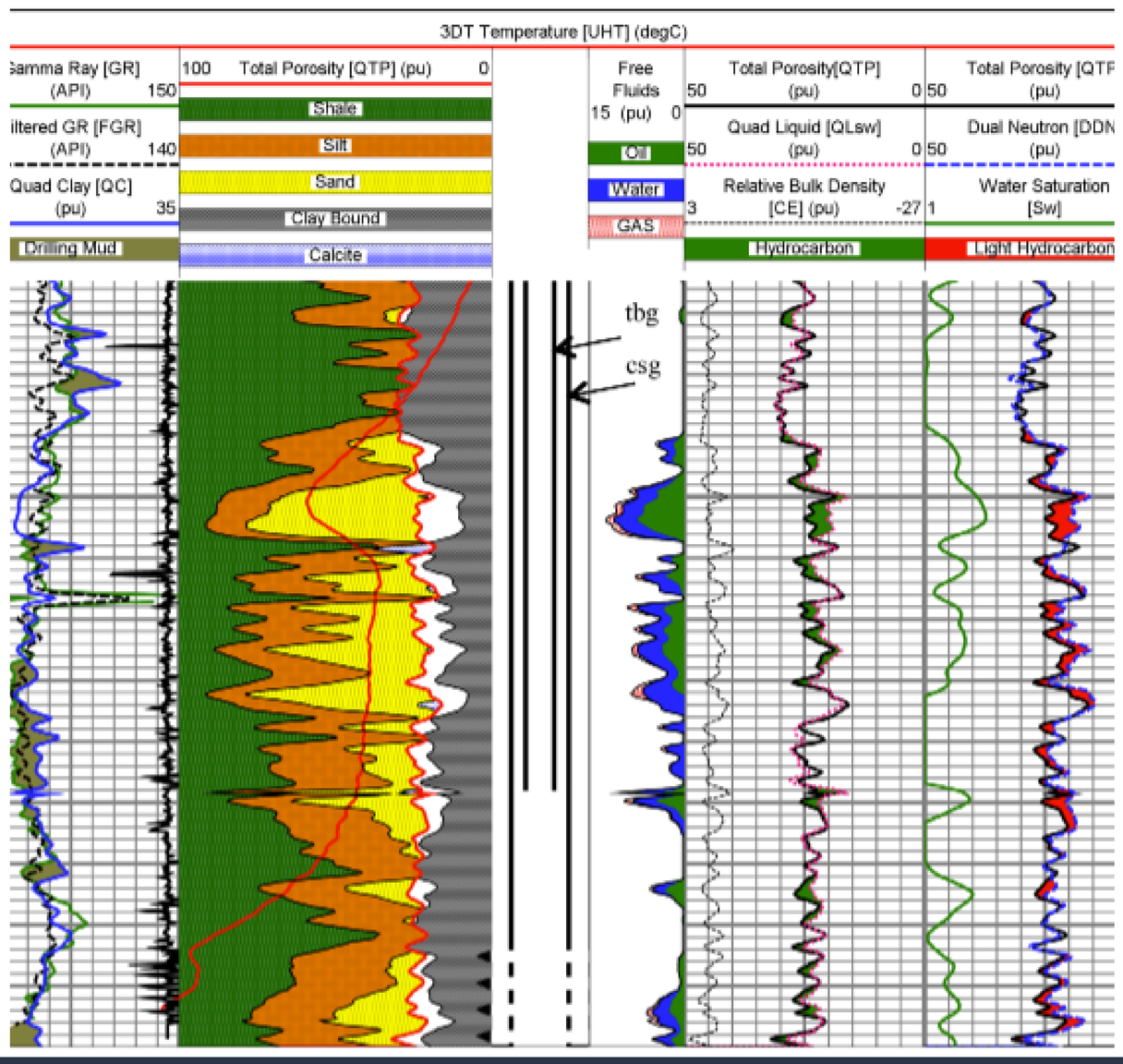
Slim tool design, OD 1-11/16"

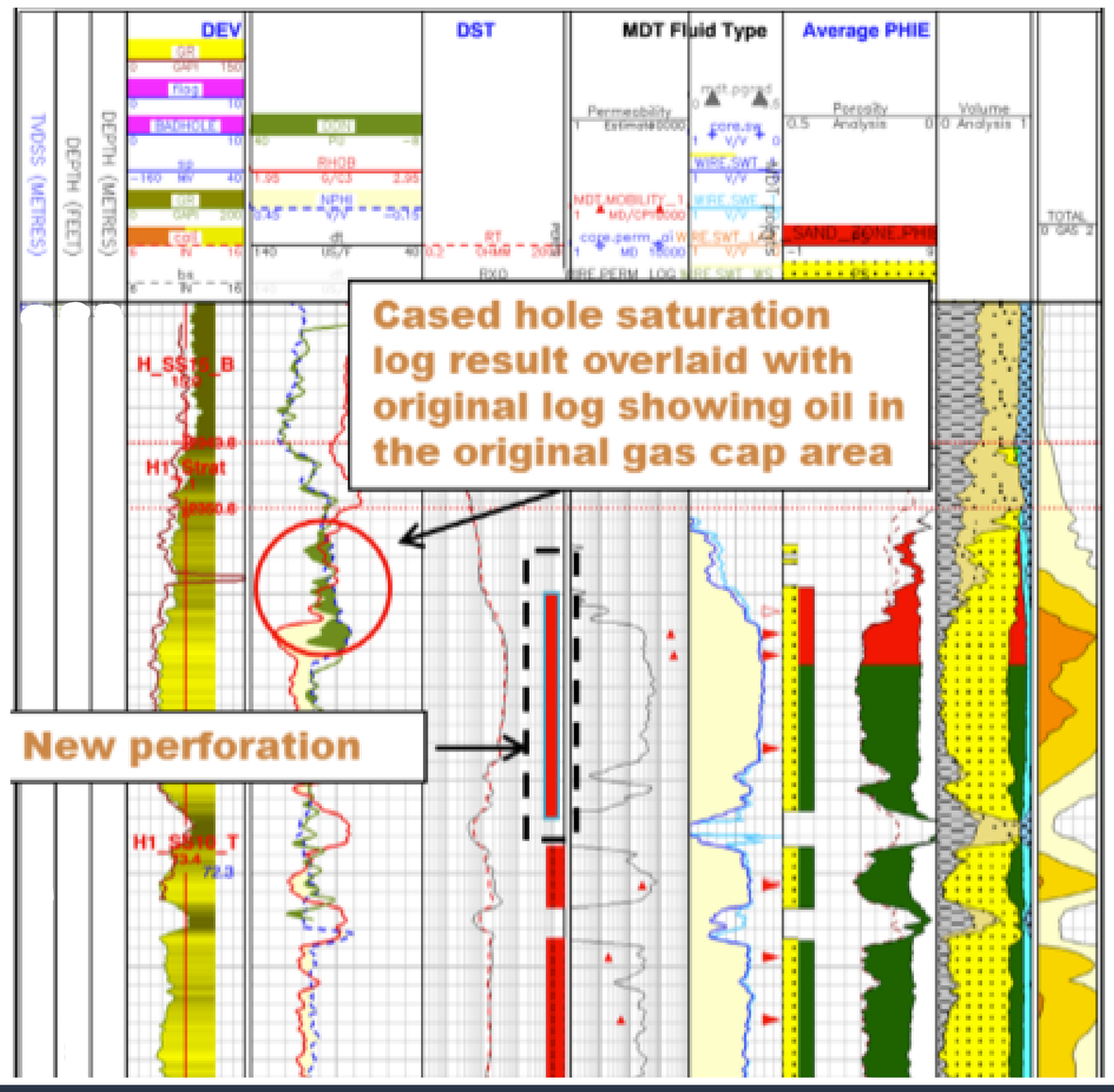
Capable of logging in both memory and real-time.

Minimizes the need for expensive and time-consuming interventions.

Identifies behind casing opportunities and enables targeted perforation.

Offers valuable insights into reservoir behavior and provides additional reservoir information, including permeability indicator, clay volume and relative bulk density.





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