Logging While Drilling Aids Accurate Core Point Selection Providing Time Savings with Lower Risk

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The primary objective of drilling an exploratory well is to identify potential hydrocarbon-bearing zones. Wireline logging techniques acquire data after the formation has been drilled. Once zones of interest have been identified from wireline logs, a sidetrack is required to recover core from these zones. There are majors risks associated with the number of trips and sidetracks required to obtain the cores. Borehole instability, deep invasion and formation alteration may cause problems for both core retrieval and formation evaluation.

Logging while drilling (LWD) measurements are acquired with the least borehole enlargement, invasion, and formation alteration possible, providing the lowest uncertainty on the true formation properties of interest and the lowest risk of data not being available due to borehole conditions. Another important benefit of running LWD is to acquire measurements as close to the drill bit as possible to assist in timely identification of zones of interest. Geostopping before the bit exits the layer provides considerable time savings and minimizes the risks associated with sidetracks and coring.

This paper outlines techniques using LWD resistivity at bit measurements to identify the top of a target layer enabling coring to proceed with reduced risk and considerable time savings.