

## **PETROPHYSICAL SIGNIFICANCE OF ORIENTED SIDEWALL CORES FOR IMPROVED RESERVOIR CHARACTERIZATION**

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**Abstract** The advent of drilled sidewall cores has made it possible to obtain much more information than was previously available from percussion sidewall cores. Directional equipment on the coring tool enables the azimuth and deviation of the bit to be recorded for each core. Inspection of the core in the laboratory, in most cases, provides information to determine the top of the core as well as the formation versus borehole ends. These parameters make it possible to completely orient the drilled sidewall core with respect to the horizon and geographic north.

Directional rock fabric studies (which require well oriented samples), such as AMS (anisotropy of magnetic susceptibility) in conjunction with dense core sampling, dipmeter data and CAST images have been successfully completed. Marked core tops enable the petrographer to obtain valuable information from sparsely sampled intervals or formations. When sampling is adequate, sedimentologic studies in formations are possible from oriented, drilled, sidewall cores. The orientation of laminations and features such as graded bedding have been established and compared to detailed dipmeter data. Directional permeability, migration of fines and skin damage studies have been made on samples drilled from the borehole wall and depth correlated to well logs with a gamma ray.