

Modelling well logs in the presence of high apparent formation dip

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Accurate determination of the petrophysical properties (Rt, GR, RHOB, NPHI, etc) of the formation in the vicinity of a wellbore with high apparent dip can be greatly affected due to shoulder-bed effect, anisotropy, eccentricity, etc. The properties cannot be read directly from the logs except when the measurement is far (>2 meters) from any boundary.

Recent developments in processing software enables the user to construct a series of layer columns to form a geologic section. The accuracy of the interpretation is assessed by comparing modelled logs computed from the section with the measured logs.

The basic procedure is to deduce from the logs and geologic knowledge a likely formation description (depth, strike, dip, and petrophysical properties) of the subsurface penetrated by the wellbore. This information is entered into the interactive software and used to forward model the log response which would yield the measured response.

Evaluation of the interpretation can be done by overlaying and comparing the modeled logs with the actual field logs.

Actual examples will be explored and conclusions drawn from them.