

VIC/TAS Branch

Luncheon talk presented by Simon Horan (Schlumberger Geoquest) to PESA VIC/TAS Branch meeting on Wednesday, May 21, 1997

"Geological Applications of Borehole Imaging"

Images of the borehole wall can be obtained by acoustic and electrical logging methods. Detailed structural and stratigraphic information can be obtained from these images which provides valuable data for reservoir characterisation studies.

Structural information includes the orientation of the stress field surrounding the borehole from borehole breakout and hydraulically induced fracture orientation. This information is used to optimise well design, especially in deviated and horizontal well trajectories. Fault and fracture plane orientation can be measured as well as identifying whether or not the fault or fracture plane is open or healed. In fractured reservoirs, fracture width and density can also be measured.

Stratigraphic applications include orientation of conventional core samples, measurement of structural dip, sandstone bed orientation and sand body orientation. When images are calibrated against cores, textural analysis can be used to identify sedimentary structures produced by currents, biogenic activity, chemical activity and deformational processes.

Borehole image examples from Australia, New Zealand and North America were shown as well as new developments and current issues in the area of borehole imaging.