

AAPG HEDBERG CONFERENCE
“Hydrocarbon Habitat of Volcanic Rifted Passive Margins”
September 8-11, 2002, Stavanger, Norway

Thickness Parameter Crossplotting
A Useful Analytical and Predictive Tool in Petroleum Exploration

HARALD BRUNSTAD

RWE Dea Norge AS, Karenslyst allé 2-4, P.O.Box 243 Skøyen, N-0213 Oslo, Norway

This poster demonstrates the use of crossplotting sand thickness versus total sequence thickness as a powerful tool in exploration and reservoir prediction in special. The technique utilizes empirical well data and has extensively been applied both on field scale and regionally for the rift related Paleocene Rogaland Group of the Norwegian North Sea.

Crossplots have been used to establish N/G ratios and threshold isopachs for sand in the stratigraphic unit. This has been transformed into a seismic comparable scale, to construct sand distribution maps from seismic isochore maps. The technique works for the sand rich turbidite basin of the Rogaland Group, but the potential of the method has not been tested in the same way on other stratigraphic units or in other geological provinces.

The method has also been used to discriminate between turbidite subsystems of different provenance areas, delineation of facies belts, and to detect differences in provenance. Lateral stacking of sandstones belonging to different sequences within the Rogaland Group has also been demonstrated.

The technique may have potential to solve other types of problems such as recognition of anomalies that do not fit into the local crossplot trends. The awareness of such anomalies may enable detection of stratigraphic errors, or local phenomena as channel erosion, injection sands, faults or income of slumps and slides.