

**AAPG Annual Meeting
March 10-13, 2002
Houston, Texas**

Remi Eschard¹, Emily Albouy², Remy Deschamps², Fabrice Gaumet², Tristan Euzen² (1) Institut Francais du Petrole, 92852 Rueil Malmaison Cedex, France (2) Institut Français du Pétrole, 92852 Rueil Malmaison Cedex, France

Detailed Reservoir Architecture of Turbiditic Channel Complexes in the Pab Sandstone Outcrops (Maastrichtian, Pakistan)

In deep offshore setting, the turbiditic reservoir simulations request detailed reservoir models showing the heterogeneity distribution at the subseismic scale. Outcrop analog studies then provide rules and quantified data-bases to better predict the reservoir heterogeneity at a very detailed scale. The Pab Sandstone in S.W. Pakistan shows in outcrops a beautiful example of a sand-rich basin floor fan. The fan consisted of 3 main channel complexes separated by hemipelagites. Each of the channel complexes was 50m thick, and laterally extended over 2-3 kilometers. A channel complex was itself made of the amalgamation of tens of elementary turbiditic channels. The downstream evolution of one of these channel complex architecture has been studied in details, from the canyon mouth to the mid-fan setting. At the canyon mouth, the channel complex was deeply incised in the underlying hemipelagites. Levees were poorly developed, and the channel fill showed many evidences of by-pass processes. Downstream, basal channel incision were less pronounced, and the amount of levees and overflow deposits also increased. Spill-over lobes often filled the uppermost part of the channel, forming a positive relief. In the mid fan setting, channel often show evidences of lateral migration. The heterogeneity in these channel complexes consisted of fine grained internal levees laterally to elementary channels, mud clast lags at the channel base or along the channel margin, and fine-grained sediments draping major erosional surfaces. These hetherolithic beds corresponded to turbidite tail facies the initial channel erosion during periods of by-pass. Inclined hetherolithic surfaces also characterized periods of lateral channel migration.