

The Relationship between Recovery Efficiency and Depositional Setting in a Deltaic Plain Environment

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A Full Field Review was conducted for a structurally and stratigraphically complex field offshore Sarawak Malaysia. The East portion of the field is a relatively simple, west-plunging flower-structure fold. The West portion of the field consists of a series of normal conjugate faults that formed in response to tensional bending over a deep-seated normal basement fault. These faults result in the severe compartmentalization of the western portion of the field.

There are over 20 separate reservoirs in the field, comprising both channel sands and incised valley fill sequences that were deposited by a generally westward flowing river system. The eastern portion of the field was situated in the upper deltaic plain where deposition was from a fluvial environment. Production from these fluvial reservoirs exhibit little to no aquifer support and recovery efficiencies range from 20 to 35%.

In contrast, the depositional setting for the western portion of the field was the lower deltaic plain which exhibits a more estuarine than fluvial setting. Production from these estuarine reservoirs exhibit significant aquifer support, and recovery efficiencies range from 35 to 50%.