

Deepwater System of Mahanadi Basin

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The deepwater channel-levee systems have come into focus of exploration since a number of giants pools have been discovered from the couple of decodes. The significance of channels are sand conduits has been understood during this period when huge volumes of sandy deposits have been identified to occur down dip of muddy slope systems in number of basins in different parts of the world. The levee overbank areas associated with the channels albeit consists primarily of mud and thinly bedded sands sometime possess excellent porosity and Darcy range permeability to form commercial reservoirs.

In the study area within Mahanadi Offshore a number of channel levee systems have been identified distributed in time and space. Out of them three were Prioritized as immediate exploration targets judging from their volume and distinctive shape. Their age ranges from Early to Late Miocene. The oldest identified channel levee system with larger aspect ratio was possibly active in the middle fan and show more aggradational component than those of the younger channels. The younger systems with less aspect ratio reflect more erosional indicating increase in energy condition in the relatively upper part of fan and expected to have more coarser clastic in them.

Volume visualization of three channel levee systems brought out amplitude distribution pattern in time and space. The high amplitude geo-bodies possibly indicate presence of coarser clastics within an overall mud dominating geological set up.

In Seismic section the younger channel-levee system show the presence of a distinct mass transport complex (MTC) at the base of it. The chaotic and Hammocky reflection pattern on the MTC is representation of slides and inverted blocks generally caused by catastrophic features of the margin.