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**Insights on Channel Aggradation Rates and Depositional Architecture of a Slope Valley Fill, Plutonio Field, Block 18, Angola**

Plutonio Field reservoirs (Block 18, Angola) primarily comprise a middle-slope valley fill channel complex. A wide range of state of the art volume/visualization and reservoir modeling technologies have been applied to conventional (40 Hz) seismic data, calibrated to appraisal well logs and a single core, to capture the detailed reservoir architecture of the sinuous channel and inter-channel elements. Limitations on resolution and imaging are in part due to seismic frequency but also complex depth varying rock property distributions.

Present seismic data over the field allow resolution of 15-25 meter architectural elements and geometries, typically one to two channel fill events. By analyzing seismic facies stacking patterns however (e.g. channel aggradation rate) one can effectively discriminate multiple offset stacked elements within a single seismic loop. Such insight on sub-seismic lateral stacking patterns is critical to effective modeling and prediction of reservoir performance, sweep efficiency and well placement.

This study will illustrate how sub-seismic forward models derived from outcrop and process based simulations when integrated with well log, seismic (40Hz) and core data lead to models that better predict reservoir continuity and connectivity. The approach of integrated data, at all scales, is viewed as an effective methodology to better capture the reservoir complexity within the pre-production phase of this significant discovery.