

## **COASTAL- TO SHALLOW-MARINE ANALOGUE MODEL FOR GAS RESERVOIR IN THE PARANÁ BASIN (SOUTHERN BRAZIL) DRAW OUT FROM SURFACE AND SHALLOW SUBSURFACE DATA.**

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The Rio Bonito Formation, an Early Permian transgressive succession deposited in the intracratonic Paraná Basin, comprises a transitional to shallow-marine facies association. This association encompasses wave- and tidal-related sandstone associated with washover fans and eolian deposits and coal seams. Detailed outcrop description, including facies analysis, gamma-ray logging, paleocurrent and petrographic data, has allowed the characterization of the architecture, geometry, heterogeneity, gamma-ray signature, porosity and permeability of the distinct components of the succession. This geological-based characterization of each facies was compared to sub-surface geophysical (GPR profiles and gamma ray logs) and core information. Ground-penetrating radar profiles were undertaken at and nearby the selected exposures using both the 10 and 100MHz antennas. The integration of surface and shallow subsurface, closely tied data has allowed the 3-D delineation of the main features related to the sand bodies, including upper shoreface to foreshore sandstone and, secondly, washover fan and eolian deposits. These sandy facies occur either as amalgamated (up to 60m thick and more than 10km wide) or as isolate sand bodies. This study may be used as an analogue model to compare with the gas reservoir recently found in the Paraná State at the same stratigraphic interval