

SEDIMENTOLOGY, SEISMIC EXPRESSION AND DEVELOPMENT GEOLOGY - FAZENDA ALEGRE FIELD - ESPIRITO SANTO BASIN - BRAZIL

GUIRRO, A. C., NOVAES, L. C. RAGAGNIN, G. M., and FONTANELLI, P. R.
Petrobras/E&P, São Mateus, Brazil

Fazenda Alegre Field, discovered in 1996, is the largest oil field onshore Espirito Santo Basin, with almost 300 million barrels of oil in place. Reservoirs are comprised of two turbiditic sandstone channel complexes, 30 and 20 meters thick, separated by one shale layer throughout the field. These sandstones were deposited by submarine gravity flows within the Fazenda Cedro paleocanyon during the Maastrichtian, leading to coalescent deposits with good communication. The principal facies consists of coarse-grained turbidite sandstones, with up to 30% porosity and 1 to 2 Darcy permeabilities, but rich in detrimental expansive clays such as smectite. Three dimensional seismic imaging and amplitude anomaly mapping of seismic attributes show the limits of occurrence of the field. The occurrence of the intermediate shale layer and the high viscosity of the oil, the production of sand and environmental constraints led PETROBRAS to plan field development through the use of up to 28 horizontal wells. The work will show detailed field sedimentology and stratigraphy with detailed core descriptions, seismic facies analysis, well planning and development concepts.