



SBGf Conference

18-20 NOV | Rio'25

Sustainable Geophysics at the Service of Society

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Submission code: MDY8L0GBZP

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ANÁLISE DOS GRADIENTES DE PRESSÃO PARA IDENTIFICAÇÃO DE FLUIDOS NO SUDESTE DA BACIA DE CAMPOS

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Introduction (Font: Arial Bold, 10).

The investigation of pressure gradients is widely used in the oil and gas industry to obtain information about the fluids contained in reservoir rocks, the pressures exerted by these fluids, and inferences about rock permeability. This study aims to analyze the pressure gradients of six exploratory wells drilled in the southeastern compartment of the Campos Basin, using pressure measurement data from the Post-salt and Pre-salt intervals. These data enabled the interpretation of gradients, the inference of present fluids, and the connectivity between reservoirs through static pressure vs. TVDSS graphs.

The knowledge produced has led to scientific advancements in one of the most specific, strategic, and confidential areas of geoscientific knowledge within E&P processes, providing a unique academic experience, as it remains a topic with limited publicly available information. Thus, this study contributes to expanding knowledge within the national academic community, integrating it into a highly relevant subject for the petroleum industry.

Method

and/or

Theory

This study focus on analyze pressure gradients in six wells in the Campos Basin, aiming to identify fluids in the reservoirs and understand connectivity between them. The study focuses on applying pressure data to infer saturation and the nature of the fluids.

This study utilized data from formation testing (TFC) to measure pressure in six wells in the Campos Basin, focusing on the Pre-salt and Post-salt intervals. The analysis began with interpreting geophysical profiles, such as Gamma Rays and Resistivity, to identify the present lithologies and fluid saturations in the reservoirs. A rigorous quality control process was applied to the pressure data, ensuring the accuracy of the measurements. Subsequently, scatter plots were created, plotting "formation pressure vs. depth" to infer connectivity between the reservoirs. The results were discussed in relation to the pressure gradients, allowing for the identification of water or oil presence and the evaluation of connectivity between the analyzed wells.

Results

and

Conclusions

The analysis of pressure gradients in the Campos Basin wells revealed that the reservoirs of the Carapebus, Namorado, and Quissamã formations are predominantly saturated with water, while wells 1-BRSA-1289-RJS and 6-DEV-18P-RJS showed indications of light oil presence. The study contributed to a better understanding of connectivity among the reservoirs, suggesting that some wells are hydraulically connected, while others are isolated due to compartmentalization. The research highlights the importance of pressure gradient analysis as a tool for reservoir characterization in the oil and gas industry, and it opens new perspectives for future investigations in the field.