

Characterization of multiple formations for gas production and CO₂ sequestration

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Summary

This study uses AVO seismic inversion and rock physics analysis to characterize four geological formations in Alberta, Canada: the Cadomin Fm., Baldonnel Fm., Montney Fm and Belloy Fm. The Montney formation targets gas production, whereas the other formations target CO₂ sequestration. AVO seismic inversion methods are used to determine the formations' elastic properties. Rock physics analysis is conducted to estimate porosity, mineralogy, and fluid saturation variations, allowing a better understanding of the cap rock integrity and reservoir capacity. The objectives include optimizing gas production in the Montney and improving CO₂ plume migration modelling. Additionally, effective stress characterization of the Montney formation can help optimize drilling targets and completion understanding.