

## **Rock Physics and Depositional Trends**

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### **Abstract**

Log based analysis of Lambda-Mu-Rho (LMR) data can predict broad trends in terms of reservoir lithology and hydro-fracture (frack) barrier presence and thickness. Understanding these trends from a rock physics perspective is important as capturing information regarding reservoir properties of interest, such as porosity and Vp:Vs ratio, cannot be constrained independently if lithology is unknown. Rock physics has emerged as a tool for geophysicists to characterize reservoir properties as they pertain to seismic elastic parameters. In addition, rock physics models have been presented that relate sedimentology and rock fabric to changes in elastic properties. Through prestack inversion of seismic data, LMR attributes can be used to determine geological trends, elastic parameters of importance as they relate to hydraulic stimulation and reservoir parameters of interest for the purpose of assessing reservoir quality and economic viability.