

## **Beyond Gamma Ray: Determining a Geosteering Program for a New Unconventional Reservoir**

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### **Abstract**

Geosteering programs used in unconventional reservoirs typically are restricted to using basic natural gamma-ray tools. Although that approach might be effective, it does not mean that all unconventional reservoirs are amenable to the same approach. A reservoir in the South Central Oklahoma Oil Province is examined to determine what kind of geosteering program can add value, with tool-selection criteria being developed in consideration of the reservoir character. Analysis of the usefulness of gamma-ray, resistivity, neutron, density and sonic tools can result in notes on operational effectiveness and impact in terms of planning a geosteering program. Pilot-log petrophysical models can be created and examined for different tool configurations and styles to assist in program design. Examples illustrate the variability in tool design and impact on planning. The results demonstrate that an integrated approach to program design and tool selection that involves geologic, petrophysical, and geo-mechanical considerations can determine a methodology that meets operational needs. Additional considerations pertain to selection of tools available and their operational value in horizontal unconventional well development.