

## **Steady-State Permeability Analysis in Unconventional Plays**

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### **Abstract**

Shale/tight rock permeability determinations have been a focus of discussion and trial for over 20 years. Crushed pressure decay, pressure pulse, steady state and transient pulse decay methods have been put forward as alternative investigative tools. Each method has attempted to quantify matrix permeability in these unconventional plays.

Rigorous comparative shale/tight rock permeability studies between the main analytical processes have not been documented. But, when limited studies have been conducted, results have not been uniform. As a result, the ability to quantify flow in tight rocks is often discounted.

Steady state permeability is put forward as a valued and defensible method for determining matrix flow in tight plays. Practical steady state analytical procedures designed to investigate both tight gas and tight oil plays will be outlined. Fracture assessment and fracture mitigation will also be discussed as fractures, if present, will otherwise dominate flow.