

## **Enhanced Oil Recovery: Investigating the Viability of a Reversed Well-Pair Configuration to Steam Assisted Gravity Drainage (SAGD) and its Applicability to Heavy Oil Reservoirs in Trinidad**

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### **Abstract**

Steam Assisted Gravity Drainage (SAGD) is a promising method of thermal enhanced oil recovery. This study evaluates the viability of a reversed well-pair configuration for SAGD and its applicability to poorly consolidated, heavy oil reservoirs in Trinidad. It shows that the reversed well-pair configuration improves the overall production performance of SAGD, in comparison with the conventional well-pair configuration, by reducing the rising-steam chamber phase by 56 % and increasing the maximum production rate by 52%. Cumulative oil recovery also improves by ~12%. Four primary production phases are identified during steam injection: the rising steam chamber phase, a maximum production plateau, the depletion phase and a minimum production plateau. Isolated steam chamber development along the horizontal section of the wellbore is interpreted to be a direct result of reservoir heterogeneity and anisotropy causing the secondary production responses observed for each primary production phase. Improvement in SAGD production performance using the reversed well-pair configuration is associated with efficient reservoir heating at the near wellbore region; reduction in the number of secondary production cycles associated with isolated steam chamber development suggests uniform steam chamber development during injection.