**SPE 90623:** [**Combined Effect of Non-Darcy Flow and Formation Damage on Gas-Well Performance of Dual-Porosity and Dual-Permeability Reservoirs**](http://www.spe.org/elibrary/servlet/spepreview?id=SPE-90623-PA)**.**

C. Pereira Tavares, H. Kazemi, and E. Ozkan.

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**Abstract:** This paper addresses the combined effect of formation damage and non-Darcy flow in naturally fractured reservoirs using simplified analytical solutions and a 2D numerical simulator. Pressure drawdown, buildup, and isochronal tests simulated in this work indicate that, despite high fracture permeability, skin damage may accentuate the non-Darcy flow effect and drastically influence pressure-transient characteristics of low-pressure, naturally fractured reservoirs. In high-pressure reservoirs, this effect is significant only at high rates. Non-Darcy flow does not usually mask the typical pressure-transient characteristics of dual-porosity and dual-permeability reservoirs, but the conventional interpretation of the early-time data may lead to erroneous results. If the exponent, n, of the isochronal tests approaches 0.5 while the matrix permeability is low and flow rate is rather high, this would indicate the predominance of fracture flow. Under these conditions, small contributions from skin damage may greatly reduce gas-well performance in naturally fractured reservoirs.