SPE 84378: [**Pressure-Transient Responses of Horizontal and Curved Wells in Anticlines and Domes**](http://www.spe.org/elibrary/servlet/spepreview?id=00084378).

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**Abstract:** This paper presents a discussion of the pressure-transient responses of horizontal wells in anticlinal structures and curved and undulating wells in slab reservoirs. It confirms that, in the absence of a gas cap, conventional horizontal-well models may be used to approximate the flow characteristics of the systems in which the trajectory of the well does not conform to the curvature of the producing structure. If a gas cap is present, however, the unconformity of the well trajectory and producing layer manifests itself, especially on derivative characteristics when the gas saturation increases around the well. In general, the most significant deviations from the conventional horizontal-well behavior are observed during the buildup periods following long drawdowns. In these cases, the pressure-transient analysis is complicated and requires detailed numerical modeling of the well trajectory and reservoir geometry in the vertical plane.