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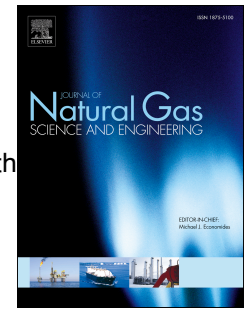

Key aspects of numerical analysis of gas hydrate reservoir performance: Alaska North Slope Prudhoe Bay Unit "L-Pad" hydrate accumulation

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Key aspects of numerical analysis of gas hydrate reservoir performance: Alaska North Slope Prudhoe Bay Unit "L-Pad" hydrate accumulation

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Abstract

In previous work, we reported the development of the 3D geostatistical hydrate reservoir model of "L-Pad" (Myshakin et al., 2016). In this paper, gas production sensitivity on key reservoir parameters are studied. Hydraulic communication with an aquifer and optimal depressurization strategies are subjects of investigation. Uncertainty in initial *in situ* permeability within 0.1-10 mD range leads to 2.0 x 10^8 - 3.5 x 10^8 ST m^3 of gas produced over 10 years. Accounting for reservoir quality and irreducible water saturation leads to noticeable change in productivity. Sequential depressurization of hydrate-bearing units was found to be more attractive versus simultaneous depressurization.