

Choice of Hydraulic Conditions on Horizontal Boundaries in Gas Reservoirs

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Issue

- Some low-permeability gas reservoirs are actually located within the center of sedimentary basins, as opposed to more commonly explored reservoirs located within anticlines and similar structures.
- This may preclude the use of the no flux upper boundary condition for gas reservoirs (i.e., an impermeable cap rock located at the top of the reservoir).
- Instead, producible gas may be located below water, in the center of a basin.
- The gas can be gravitationally stable if the rock is of low permeability and if there is sufficient recharge to balance gas buoyancy.
- Problem is choose upper and lower boundary conditions such that measured liquid saturations are maintained in the formation when trying to achieve steady-state conditions.



