Analysis of gas production methods for methane gas hydrate reservoirs

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In methane gas hydrate reservoir (MH), pressure and temperature conditions are in the MH stability region in the initial stage. To dissociate MH and produce gas from a MH reservoir, pressure and temperature conditions should be moved to the dissociation region. Therefore, three methods of depressurization, thermal and inhibitor injection have been modeled and analyzed as a basic methods for different conditions that might occur in nature. Furthermore, several methods such as injection of gas other than methane and irradiation of ultrasonic wave were also investigated especially for the MH dissociation and possible gas production. The simulation results allowed to select optimal screening approach for the appropriate production method that can be employed in specific MH conditions.