

Low pressure liquid reservoir can simultaneously

Ultralow-temperature fluids (such as liquid nitrogen, liquid CO₂) are novel waterless fracturing technologies designed for dry, water-sensitive reservoirs. Due to their ultralow temperatures, high compression ratios, strong frost heaving forces, and low viscosities, they offer a solution for enhancing the fracturing and permeability of low-permeability reservoirs. In this ...

One is the low-pressure gaseous diffusion, and another is the liquid-phase diffusion. The kinetic theory of dilute gases forms the basis for the gaseous diffusion modeling. ...

The permeability of tight oil reservoirs is no longer a constant, but a variable, which is dependent on reservoir pressure. In other word, the tight oil reservoir is stress sensitive media. The low-velocity non-Darcy flow and stress sensitivity will greatly affect the bottom hole pressure response.

Finally, point A, where the solid/liquid, liquid/gas, and solid/gas lines intersect, is the triple point; it is the only combination of temperature and pressure at which all three phases (solid, liquid, and gas) are in equilibrium and can therefore exist simultaneously. Because no more than three phases can ever coexist, a phase diagram can ...

Low abandonment pressure in the reservoir provides additional voidage-replacement potential for CO₂ and allows for a low surface pump pressure during the early period of injection. However, the ...

slightly compressible liquid at a reference (initial) pressure p_{ref} , the changes in the volumetric behavior of this fluid as a function of pressure p can be mathematically described by integrating Equation 6-1 to give: where p = pressure, psia V = volume at pressure p , ft³ p_{ref} = initial (reference) pressure, psia V

0.29 0.072b K ïEUR­ ï,¥ïEUR½ (7) The impact of slippage effect on the production depends on the permeability and gas reservoir pressure, the smaller the permeability and gas reservoir pressure, the more remarkable the impact of slippage effect will be. 3.2.

In order to further explore the technology of water injection development in ultra-low permeability reservoir, the Chang 6 reservoir in S area is taken as an example in this study to analyze the ...

1 · The failure mechanism of shear-expansion effect under low pressure and dynamic shear under high pressure of coal beddings induced by the dissolution-corrosion effect of fracturing ...

pressure decline rates observed in the field based on static pressure gradient surveys despite the field's uniformly low production decline rates. Reservoir pressures at the permeable zones of Bulalo 100 were then estimated using pressure, temperature and flow data obtained from shut-in and injecting PTS surveys.

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The cryo-turbine is the reliable liquid expander device to generate low pressure liquid product by expanding the high pressure liquid fluid. In contrast to the throttling valve, the working fluid expands through the cryo-turbine in a near-isentropic manner with the decrease of both temperature and enthalpy, thus raising the amount of liquid ...

This study proposes a new apparatus which can simultaneously measure the physical properties such as low-permeability and porosity in a tight gas reservoir. ... To generate pressure pulse, high pressure generator was installed, which can ... K., Walls, J.D., Ajufo, A.O., 1986. Laboratory Determination of Effective Liquid Permeability in Low ...

Well failure: A malfunctioning well pump can cause a water pressure drop in a building. This can be due to a tripped breaker or a failed motor. Partially closed main valve: If the water pressure is low around the entire house, but water is still flowing, the main valve might be slightly closed. This valve regulates the water flow from the well ...

Low-pressure membranes (LPM) have become a well-established technology in drinking water treatment (DWT) applications, with rapid growth over the past two decades [[1], [2], [3], [4]]. The popularity of LPMs may be attributed to several factors including: (1) reliable operation with a superior quality product water, even in the face of changing feed water quality [5, 6]; (2) ...

Developing low-permeability reservoirs with low porosity and permeability remains a significant challenge owing to the high reservoir stresses and poor water injection effects; both factors are ...

(1) and integrating both sides of the deformation equation, the state equation of fluid under any reservoir pressure p can be obtained as follows: (2) $\rho = \rho_i e^{-C_r(p_i - p)}$ where ρ is the fluid density, kg/m^3 ; ρ_i is the fluid density at the initial reservoir pressure, kg/m^3 ; C_r is the compression coefficient of the fluid, MPa^{-1} ...

The main purpose of secondary recovery process is to maintain the reservoir pressure by either a natural gas flooding or water flooding. The rise in world oil prices has encouraged the producers ...

According to Nelson and Pope (), if effective mobility control is maintained, only a short period of ultra-low IFT conditions in the reservoir is sufficient for effective oil emulsification and mobilization. Accordingly, slug (liquid) was injected for 0.5 pore volumes (PV) right after water flooding. Slug injection was followed by the injection of drive solution with 0.2 wt% APG (Table 2).

Establishment of productivity equation is an important premise for rational and efficient development of low-permeability condensate gas reservoir and accurate analysis of production performance. Based on two-phase seepage mechanism of gas and condensate oil in formation, the productivity equation is established considering threshold pressure, stress ...

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Waterflooding is an important functional process for low-permeability reservoir development. ... it is unreasonable to utilize the formation-parting pressure as the maximum threshold of the water injection pressure in a low-permeability reservoir characterized by the presence of natural fractures. ... Simultaneously, the water cut of well K5 ...

The flow rate increased by 0.5-1 times under the action of sound waves for about 6 h. It indicated that the low-frequency wave can change the rheological properties of the polymer solution during the excitation. Dyblenko et al. [48] investigated the effect of water-driven kerosene in reservoir rocks using 200 Hz acoustic waves. The ...

1 · Pressure transient analysis plays a crucial role in the characterization of reservoirs, providing valuable insights that help engineers understand reservoir behavior and make ...

Recently, more and more deep reservoirs are developed due to the appearances of new technologies. Among them, gas-condensate reservoirs, with high temperature, high pressure, and low permeability ...

The higher saturation pressure an oil reservoir possesses, the earlier the bubbles will occur. Continuing to decrease the pressure, more and more gas will escape from the crude oil. If the initial pressure of a reservoir falls exactly at the point I, it can be called a "saturated reservoir." The point L represents a reservoir with gas-cap.

For a volumetric reservoir, the general MBE states that the volume of underground withdrawal, resulting in a pressure drop in the reservoir, equals the expansion of reservoir fluid(s) plus reduction in hydrocarbon-pore volume (connate water expansion plus pore volume reduction). The technique can be applied to estimate reserves and the =)

Many engineering technologies involve the moving boundary problems for the radial seepage flow with a threshold pressure gradient, such as the well testing in the development of low-permeability reservoirs, heavy oil reservoirs and groundwater resources. However, as a result of the strong nonlinearity, an exact analytical solution of the ...

In the early stage of the development, the reservoir pressure increased to 42.6 MPa due to the water flooding. However, with the failure of water injection in 2014, the reservoir pressure decreased gradually until 2021, when a short-term injection test of CO₂ was conducted, and the reservoir pressure returned to 40.12 MPa (October 2022).

Depending on the pressure behavior of a gas reservoirs, most of the rich gas reservoir performance can mainly be divided into three time periods: (i) when the overall reservoir pressure is higher than dew point; (ii) when just the pressure of the near well drops below the dew point pressure; and (iii) when overall reservoir pressure is lower ...

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Low water extraction rates are important because any CO₂-coproduced water or brine from the shallow reservoir has to be removed (and disposed of) before the CO₂ is injected into the deep reservoir as water injection into a reservoir reduces the fluid mobility and increases the fluid pressure near the deep injection well screen, reducing the ...

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