

عنوان مقاله:

Investigation of Water Production Problems and Water Shut Off Techniques in Oil Wells

محل انتشار:

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خلاصه مقاله:

Unwanted water production in association with crude oil is one of the major production difficulties for the petroleum industry, as more reservoirs become mature. Costs of lifting, handling, separation and disposal of large amounts of produced water, environmental concerns about this water, coning due to bottom water drive, large amounts of produced water from high permeability layers, increased corrosion rates, higher tendency for emulsion, and scale formation are among the main problems due to water production which often decrease the economic life of a well. Therefore, there is a need to reduce excessive water production. Several mechanical and chemical methods are available for water shut-off treatments in the hydrocarbon wells. Numerous technologies have been developed to control unwanted water production, but the nature of the water production must be known in order to design an effective treatment. Once the water production mechanism is understood, an effective strategy can be formulated to control water production. The flow of water to the wellbore can occur through two types of paths. In the first type, the water usually flows to the wellbore through a separate path from that of the hydrocarbons. This type of water production directly competes with oil or gas production. Reducing water production in this case often leads to increased oil and gas production rates and higher recovery efficiencies. This type of water production should be the primary candidate for water control treatments. The second type of water production is water that is co-produced with oil usually later in the life of a water flood. Reducing production of this type of water will result in corresponding .reduction in oil production

کلمات کلیدی:

water production, water shut-off, gel polymer

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