

Inventions & Innovation Emerging Technology

Process for Conserving Steam Quality in Deep Steam Injection Wells

High steam quality, required for successful heavy oil recovery, is difficult to achieve in deep wells from surface-generated steam because of excessive steam tubing heat loss. Three methods are available to reduce such a loss: insulated tubing, a gas-filled casing-tubing annulus, and a heat source in the annulus gas to prevent condensation of water vapor on the casing wall. All three methods have been combined in a new process, in which a heat source is provided by hot oil and water flowing from the reservoir to the surface in production tubing that is parallel to the steam tubing.



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