Reservoir Souring

A Field-Scale Coupled Modeling Approach

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The study of microbial activities in hydrocarbon reservoirs in large scales is of paramount importance. The effect of mixing in real-world reservoir results in considerably lower effective (upscaled) growth rates for microorganisms compared to laboratory or small-scale modeling studies. Moreover, the properties of flow and generation zone of hydrogen sulfide and microorganisms heavily affect the hydrogen sulfide generation response in the production wells. In this poster, it is illustrated how a sub-optimal nitrate treatment plan can cause higher hydrogen sulfide production from production wells despite a lower total amount of hydrogen sulfide generated inside the reservoir.

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