Research on Technology of Water Treatment and Corrosion Control of Oilfield Sulfur-containing Wastewater

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Abstract：The service life of onshore oil fields has successively entered the middle and later stages, with a decrease in oil well production and a gradual increase in comprehensive water content. One of the prominent issues is that corrosion and leakage caused by hydrogen sulfide occur frequently in oil wells with no H2S in the early stage of production. It makes the subsequent water reinjection treatment and production more difficult, and increases the cost of reinjected water treatment. In this article, research is conducted on sulfur-containing produced water analysis, SRB, corrosion rate measure, as well as the related experiments. The process flow is optimized, and the multifunctional sulfur removal agent product as well as the matching specialized processing equipment are developed. After desulfurization, deoxygenation, and pH adjustment, the water quality has SRB ≤ 10^2, oil content ≤ 20mg/L, and suspended solids ≤ 10mg/L, meeting the water quality standards for oilfield reinjection water.

Keywords：Sulfur containing wastewater; Corrosion rate; Wastewater treatment; Reinjection indicators