

Casing sizes	8½ in and 7 in
Patch length	19.7 ft [6 m]
Leak intervals	3 ft and 2 ft [0.9 m and 0.6 m]

Background

Numerous wells in California use thermal recovery techniques to extract oil. According to a report by Yale University, steam has helped make the state the third largest oil producer in the US, after Texas and North Dakota. The age of the wells combined with the corrosive downhole conditions has, however, made casing leaks a common challenge.

One operator turned to Schlumberger to address three such leaks; the repairs had to withstand temperatures up to 380 degF [193 degC] during steam injection cycles. Saltel high-temperature patches are suitable for use up to 446 degF [230 degC]. They are ISO 14310–qualified for short-term resistance to 482 degF [250 degC]. Extreme-HT patches are available for higher temperatures up to 662 degF [350 degC].

Technologies

- High-temperature expandable steel patches from Saltel, a Schlumberger company

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Saltel Expandable Steel Patches Seal Casing Leaks in Two Cyclic Steam Stimulation (CSS) Wells

High-temperature patches extend well life despite hostile well conditions



The first well used two high-temperature 19.7-ft patches in 8½-in casing. The first patch was deployed across a leak interval extending from 58 ft to 61 ft [17.7 m to 18.6 m]. The second patch passed through the first and was installed across a leak interval extending from 711 ft to 714 ft [216.7 m to 217.6 m].

The second well used one 19.7-ft patch in 7-in casing to seal a leak interval extending from 406 ft to 408 ft [123.7 m to 124.4 m]. Pressure tests confirmed that the leaks were successfully sealed.