

Proactive approach prevents scaling in Permian’s water-rich formations

‘Leading-edge’ SCALEGUARD technology tackles exorbitant water volumes to tame scale

Permian Basin, West Texas

The challenge

The operator’s latest Permian Basin lease acquisition encompasses still-emerging horizontal development of the San Andres dolomite formation, located amid the basin’s water-rich residual oil zone (ROZ). With produced water volumes averaging 4,000 bbl/d with a 60/40 oil cut, scale deposition is a persistent, and costly, production assurance issue. Thus, scale inhibition was one of the operator’s chief objectives in electing to proactively employ leading edge technologies to increase production and estimated ultimate recoveries (EUR).

The solution

CARBO’s water-activated SCALEGUARD proppant-delivered scale-inhibiting technology was among the leading edge technologies the operator chose to enhance production from its San Andres wells. SCALEGUARD is a porous ceramic proppant engineered with an innovative controlled release technology and infused with scale inhibitors. SCALEGUARD is pumped uniformly throughout the fracture network, where as part of the proppant pack, it blocks scale formation at its point of origin. The technology was initially earmarked for six San Andres wells, to be completed with an average of 14 to 16 stages and stimulated with a blend of 100-mesh and 30/50 white sand pumped at an average rate of 180,000 lb/stage. CARBO specialists conducted a water chemistry analysis of the six targeted wells as a prelude to develop the minimum inhibitor concentration (MIC) and placement release rate to extend the treatment length. Engineered for the individual well characteristics, SCALEGUARD was mixed with the 30/50 regular sand.

Well Data

Location: Yoakum County, Texas

Operator: Independent

Formation: San Andres

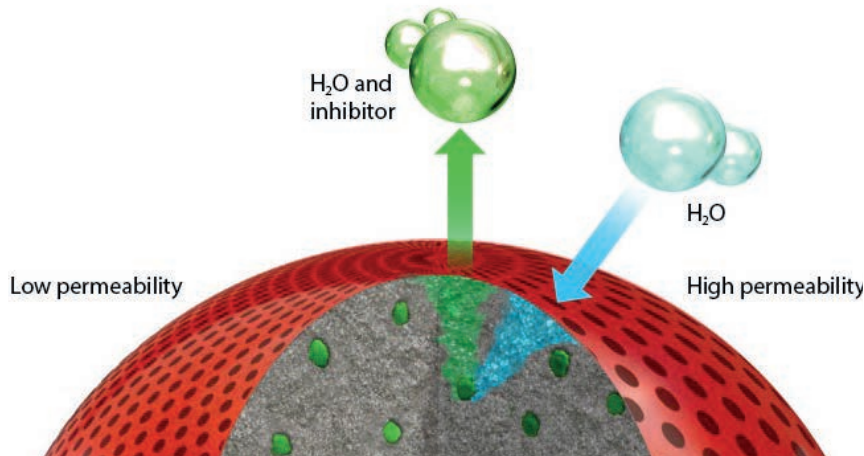
Wells/ type: 6 wells, oil

No. of stages: 14-16 average, 32 highest

Produced water volume:
4,000 bbl/day (60/40 oil cut)

Proppant types: 100 mesh, 30/50 white and 30/50 regular sand, mixed with SCALEGUARD proppant-delivered scale-inhibiting technology

Proppant pumped: 180,000 lb/stage (avg.)

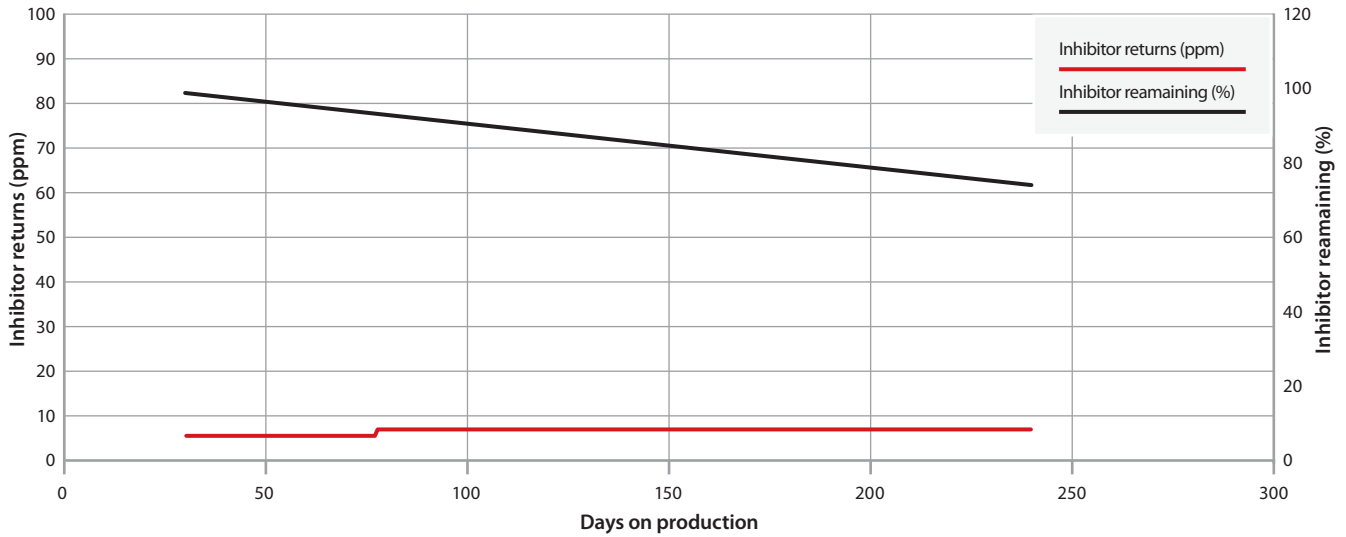


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The results

Since the initial treatment, no scale has been observed in the six wells, one of which was eventually completed with a field-high 32 frac stages. The experience has further reinforced SCALEGUARD as a cost-effective option for increasing reservoir drainage in areas where exorbitant produced water volumes pose severe production assurance issues.

Inhibitor residual data



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