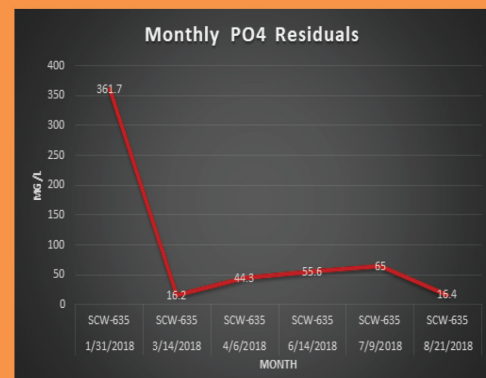


SCALE SQUEEZE TREATMENT IN SAN ANDREAS FORMATION WELL

CO₂ FLOODED FIELD



CHEMICAL SOLUTIONS

Challenges

- West Texas CO₂ flood
- Production decline
- ESP system in danger of failing from possible scale build-up in pump

Tech Management Solution

- Tech Management SCW635 phosphate scale squeeze treatment

Results

- Increased annual revenue
- Provided a six month runtime of PO₄ residuals above the MEC of 10 ppm thus protecting the well from possible scaling issues

West Texas CO₂ Flood - Calcium Sulfate Solution

An operator in West Texas experienced a rapid production decline in a San Andreas formation well that was in a CO₂ flooded field in Gaines County. The subject well was on an ESP pump prior to the scale squeeze, and although no scale solids were seen on the downhole production equipment, the operator wanted to squeeze the well as they were going to convert the lift method to rod pump. The well had a depth of 5,255 feet and a gross perforated interval of 106 feet.

Lab analysis revealed the scaling tendencies based on water analysis was predominately for calcium sulfate (CaSO₄). The squeeze was performed using Tech Management's SCW635. Monthly PO₄ residual concentrations showed a gradual decline over a six month period, but concentrations stayed above the 10-ppm minimum effective concentration for the squeeze product.

After cleaning up the well and applying the scale squeeze treatment, the production of the well experienced an increase in production.

Note: This case study is presented for illustration purposes only as results may vary between applications.

