Corrosion Monitoring Tools Prove Effectiveness of Chemical Application via Slip-Stream.

Location: Central Canada

Overview
A Canadian customer was experiencing multiple downhole corrosion failures in their field, and was concerned with the loss of production due to downtime and the cost of repairing these failures, which averaged $10,000 to $15,000 per well. The Multi-Chem Account Managers and Technical Application Specialists collected fluid samples to test for a wide range of corrosion indicators, finding that production is primarily oil/water with 20m³ (~126 bbls) oil; 707m³ (~4,447 bbls) water; and 3 e³m³ (~0.11 mmscf) gas. This production is sweet, with approximately 1% CO₂.

Based on test results, Multi-Chem recommended a continuous treatment application of the corrosion inhibitor MX 879-6 down the annulus at a rate of 25 ppm (based on water volumes), with a slip-stream flush to assist in carrying the corrosion inhibitor downhole. A corrosion monitoring ER probe also was installed to collect real time data that could be used to evaluate the effectiveness of not only the corrosion inhibitor, but also the application via slip-stream flush.

Corrosion rates recorded by the ER probe confirmed that application of the corrosion inhibitor via slip-stream was highly effective:

- Continuous application = 1.45 mpy
- Continuous application via slip-stream flush = 0.05 mpy

On-going monitoring with the ER probe indicates the corrosion program continues to be effective, with corrosion rates staying steady around the 0 mpy mark – lower than when the corrosion inhibitor is applied without the slip-stream flush. In addition, operating costs have been reduced overall by fewer failure repairs and less production downtime for those repairs. This data was given to the customer and has since solidified Multi-Chem’s working relationship, which has led to additional opportunities with this customer.

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<th>CHALLENGE</th>
<th>SOLUTION</th>
<th>RESULT</th>
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<td>Multiple downhole corrosion failures had this operator concerned with the loss of production due to downtime, as well as the cost of repairs.</td>
<td>A continuous treatment application of corrosion inhibitor MX 879-6 with a slip-stream flush proved an effective and economically viable solution.</td>
<td>Operating costs have been reduced overall by fewer failure repairs and less production downtime for those repairs, while run time of the wells has increased significantly.</td>
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