

TECH REPORT

TEXAS, USA

Choke inlet pressure

Initial 3,950 psi [27 MPa]

Final 2,875 psi [20 MPa]

Flow rates

Natural gas 1.4 MMcf/d [39,644 m³/d]

Oil 1,500 bbl/d [238 m³/d]

Water Negligible

CO₂ content 1.5%

H₂S content 55 ppm

Background

After hydraulic fracturing, the fluids pumped downhole must return to surface through a flowback tree. These fluids can contain large amounts of frac plug debris and other solids that can be damaging for chokes in the tree. The choke trim often must be replaced multiple times during flowback, increasing costs, NPT, and the risk of exposure to H₂S, other harmful substances, and high pressures. The operator decided to test the durability of the CAM20-MT multitrим choke valve with external floating sleeve (FS) trim—installed in a 2¹/₁₆-in, 5,000-psi flowback tree—on one of its wells in the Black Hawk field, Eagle Ford Shale.

Technology

CAM20-MT multitrим choke valve with external FS trim

Other company, product, and service names are the properties of their respective owners.
Copyright © 2016 Schlumberger. All rights reserved. 16-SUR-162051

CAM20-MT Choke Valve Withstands Erosive Fracturing Flowback with No Damage or Wear, Eagle Ford Shale

External floating sleeve trim remains unaffected by high flow rates and pressures as well as abrasive solids in the fluid flow



The test lasted 72 hours with no shut-ins. The choke opening was gradually increased from $\frac{9}{64}$ in to $\frac{19}{64}$ in. During this time, the choke withstood pressures ranging from 3,950 psi to 2,875 psi. After the test, the choke valve was removed and subsequently disassembled and thoroughly inspected in the workshop. There were no signs of erosion, corrosion, damage, or wear, even in the lowest part of the seat, which is exposed to the most severe conditions due to high fluid velocities and large debris; the seat and FS trim were in as-new condition. The seals were replaced and the choke valve swiftly returned to service so that production could continue through the flowback tree, a common practice in the Eagle Ford.