

Case Study 2

Midstream Gas Gathering Meter Protection

Background

A Midstream operator of natural gas pipelines had numerous metering stations with gas meter valve operation failures. It was reported that fouling from high contamination levels was causing meter failures on a weekly basis. Additionally, their current depth type filters were plugging in 2-3 days causing excessive OPEX. Northeast Filter was contacted to evaluate their process, identify the contamination source and provide a solution to improve filter life and OPEX.

Solution

Through our VAS services, a field test filter was installed to perform analytical filterability tests. The spent filter media was autopsied and evaluated to determine contamination composition, size distribution and gravimetric burden to be used for sizing and recommending optimal filter medium. For comparative purposes, NFC also analyzed the current filter being used. It was determined that the captured particle composition was Iron Sulfide and Chlorides (Salts) which are common natural elements found in shale gas production. We also determined that > 90% of the particles were between $5\mu\text{M}$ & $12\mu\text{M}$ in size. The current depth type filter was surface loading resulting in short on-stream life. The published retention rating for the current filter was $5\mu\text{M}$ however it was effectively only removing $30\mu\text{M}+$ particles. Northeast Filter recommended a high efficiency pleated filter rated at 99% at removing 5-12um particles. Once the new pleated filters were installed, no new meter failures were reported after 6 months in service and filter on-stream life improved 300% to almost 17 days.

