



Amine Filtration C o m p a n y

Specializing in Filtration and Separation for Amine Units

Filtration Troubleshooting for Short On-Line Life

We believe that root-cause analytics, expert interpretation and process evaluation are vital to troubleshooting filtration problems. Amine Filtration Company offers expertise and experience in a wide range of filtration applications and utilizes advanced techniques in order to troubleshoot and resolve process filtration inefficiencies. Our solutions include:

- On-Site Evaluations & Testing
- Operational Improvements
- Technical Training
- Equipment Evaluations
- Specialized Sampling & Analytics
- Gas and Liquid Performance Testing
- Process Stabilization & Optimization
- Advanced Modeling & Simulation

Root-Causes Impacting Short Filter Life

Short on-line life in a filter for the removal of suspended solids can be triggered by many reasons, and in some cases it is neither easy nor obvious to establish the root-cause without a comprehensive engineering evaluation (in lab and on-site). Some of the main reasons for short filter life in filter are listed below:

- 1) Excess suspended solids in the inlet caused by:
 - High solids in the feed from upstream (upstream separators not working properly)
 - High corrosion rates in the unit where filtration is installed
 - High activated carbon fragmentation (if activated carbon bed is upstream of the filter)
 - Pigging of the line upstream (considerable solids sent downstream)
 - Variation in feed contaminants (slugs of high solids contents at specific times)
 - Additives used upstream (affecting clays, asphaltenes and waxes)
 - New process or wells being commissioned with considerable solids sent downstream
- 2) High filter element flux (flow/filter area)
- 3) Filter material incompatibility (chemical, mechanical or thermal) or incorrect media efficiency
- 4) Plastic solids such as asphaltenes or waxes. These solids form a thin film over the filter material causing the differential pressure to increase rapidly.
- 5) "Shoe Polish" sludge (hydrocarbons + solids). This material saturates the filter media causing the differential pressure to increase rapidly.
- 6) Presence of "Damaging Particles". There is a certain suspended solid particle size diameter that will occlude (plug) the filtration material pores. This also causes the differential pressure to increase rapidly (and life is shortened considerably).
- 7) Filter vessel design did not properly take into account high solids concentration at the inlet resulting in higher vessel maintenance and reduced filter media life.
- 8) Incorrect filter element design. The filter element media is not being designed or assembled correctly for maximum effective surface area (area exposed to the fluid).
- 9) High clean differential pressure (this reduces the life of a filter considerably)
- 10) Filters not operated to the recommended terminal differential pressure.

For additional information, please contact us at Help@AmineFiltration.com