

# SAAF™ Media Remaining Life Analysis (RLA)



- Estimates remaining life, replacement schedules, and inventory requirements of media and gas-phase filters
- Provides confirmation of media activity after an event (helicopter landing, solvent spill, open media container)
- Provides information to optimize media choices and maximize system life
- Controls cost by ensuring replacement of media at the proper time

Engineers and end users often ask, “How long will the media last?” or “How frequently should the media be changed?” The answer depends on the application and the gas concentrations in the environment. Various tools can help answer these questions, ranging from air measurements to occupant surveys. AAF Flanders recommends Remaining Life Analysis (RLA) for standard SAAF media. RLA assists customers in estimating remaining media life, confirming media activity, optimizing media selection, and controlling costs with timely media replacement.

## Estimating Media Replacement Dates

AAF Flanders’ RLA helps our customers estimate media replacement dates. As shown in Figure 1 below, it is best to base the media replacement date on multiple samples. AAF Flanders recommends sampling the media every three to six months during the first year to develop a history of media life analysis. After the first year, a less frequent sampling schedule can be developed based on the RLA trend from the previous year.

## Remaining Life Analysis (RLA) Trend

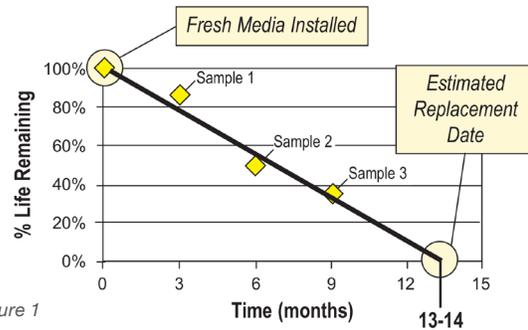


Figure 1

## Sampling Gas-Phase Media Systems

RLA samples may come from various gas-phase filtration systems, including: SAAF Cassette Systems (Front Access Housings, Side Access Housings, Recirculation Units, Pressurization and Recirculation Units), PORTA-Scrubbers, and Deep Bed Scrubbers.

For instructions and details of remaining life calculations, please refer to the SAAF Media Life Analysis Testing brochure (GPF-9-101).



Media samples taken from customer filtration systems are submitted to AAF Flanders Laboratories for detailed analysis.

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## Types of Remaining Life Analysis (RLA)

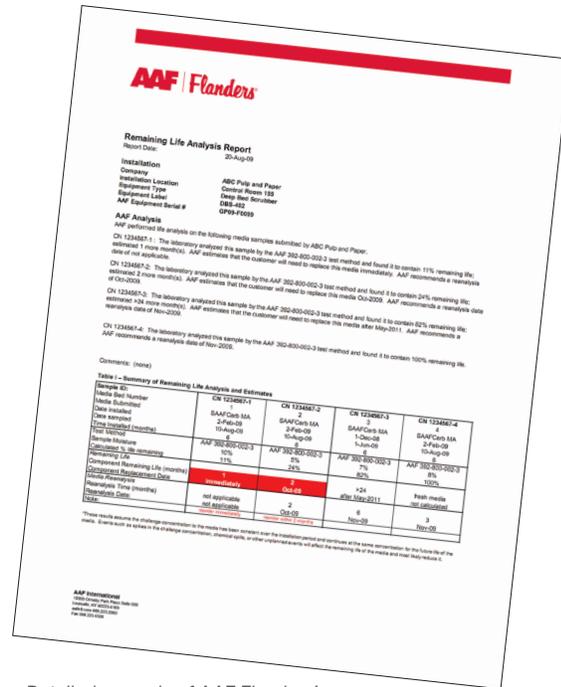
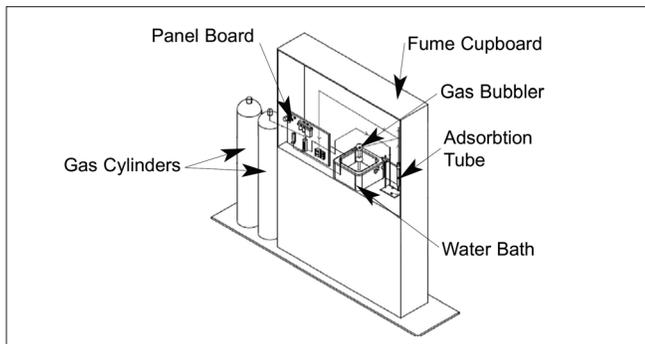
Gas-phase filtration media include a wide range of materials. Virgin activated carbon, impregnated carbon, and impregnated alumina are the most common. The life of each media depends on multiple factors, such as particle size, activity level, contaminant concentrations, operating temperature, operating RH, time of operation, minimum allowable breakthrough, type of impregnant, and percent impregnation. AAF Flanders estimates the impact of these factors on media life by comparing used media properties to those of fresh media.

The following RLA methods are required for various types of media:

**Carbon Tetrachloride (CTC) Activity** applies to virgin activated carbon. This test evaluates activated carbon capacity for organic compounds. Since regulations now ban the use of CCl<sub>4</sub> in many areas, the ASTM D 5742 Butane Activity Test is used and correlated to the CTC Activity. Other methods correlated to the CTC activity may also be used to estimate this property.

**Gas Capacity** applies to many impregnated media. This test evaluates the media capacity for inorganic compounds. It uses the ASTM D 6646 method for hydrogen sulfide and a modification to this method for other inorganic compounds.

**Percent Active Impregnant** also applies to impregnated media. This test evaluates the remaining active impregnant (potassium permanganate or other chemical) contained in the media. The percentage of remaining active impregnant correlates to a known gas capacity in certain impregnated media and can be used to estimate the remaining media capacity.



Detailed example of AAF Flanders' SAAF Media RLA Report

## Remaining Life Analysis (RLA) Reports

For each analyzed sample, AAF Flanders produces a RLA report. The report contains the installation and equipment information, an explanation of the results, recommendations, and a summary table. This data can be logged over time to analyze the RLA trend of a system.



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GPF-1-133B 01/17