Donaldson
FILTRATION SOLUTIONS

APPLICATION PAPER
Compressed Air & Process Filtration

CUSTOMER: International Yogurt Producer

LOCATION: U.S. (Utah), Mexico, France, Spain, Russia, Eastern Europe, and Asia

INDUSTRY: Dairy

PRODUCT: Yogurt

APPLICATIONS: (Current)
- Point-of-Use Compressed Air Purification
- Steam Sterilization (SIP)
- Process Water Prefiltration and Final Filtration

PRODUCTS: (Current)
- PE in AG Housing
- SMF in AG Housing
- AK in AG Housing
- P-SRF in PG-EG Housing
- P-GS in PG-EG Housing
- PP in PF-EG Housing
- PF-PES in PF-EG Housing

APPLICATIONS: (Potential)
- Central Compressed Air Drying and Filtration
- Ingredient Water Prefiltration to RO system
- CIP Water Filtration
- Storage Tank Ventilation

PRODUCTS: (Potential)
- Ultrapac 2000 Heatless Desiccant Compressed Air Dryer
- P Particulate Filter Element in an Ultra-Filter™ DF Filter Housing
- S Coalescing Filter Element in an Ultra-Filter DF Filter Housing
- A Activated Carbon Filter element in an Ultra-Filter DF Filter Housing
- PP in PF-EG Housing
- PF-PES in PF-EG Housing
- P-BE (Element/Housing)

SUMMARY

Compressed Air

In addition to the usual requirements of central drying and filtration of plant air, food and beverage facility applications require point-of-use air filtered to a sterile condition. This sterile air can be used in a number of ways: blanketing of the packaging area, as a motive force for raw materials, and as a motive force for mixing ingredients. For approximately 25 years, Donaldson Company has been meeting point-of-use sterile air filtration requirements at plants around the world.

As shown in Figure 1, the sterile air filtration train consists of three stages of prefiltration—particulate, coalescing, and activated carbon filters—followed by a P-SRF sterile air final filter. The sterile air filter is permanently connected to a P-GS steam filter for sterilization in place (SIP). The compressed air prefilters utilize standard industrial filtration housings while the sterile air and steam filters utilize PG-EG 3-A certified sanitary grade housings.

Compressed Air Sterilization

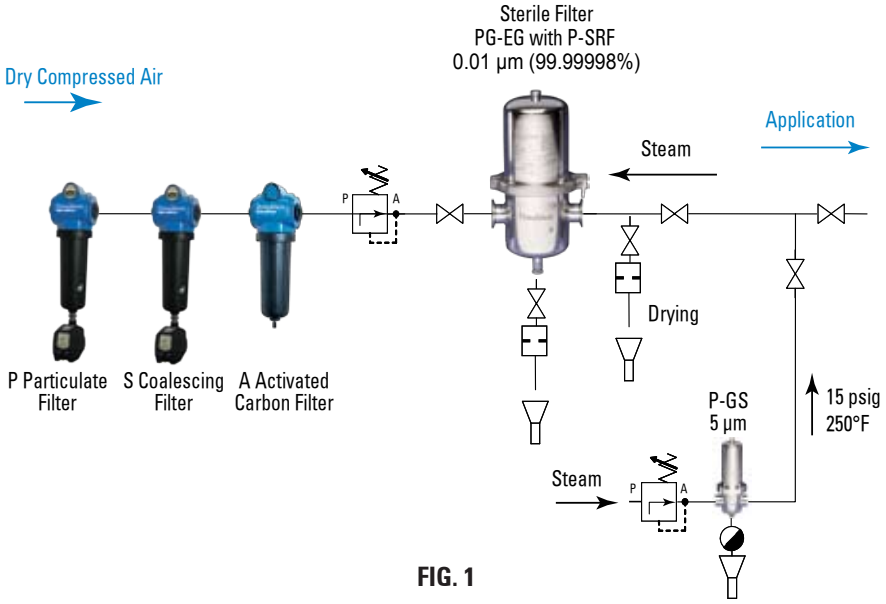

FIG. 1

Water

This customer identifies two categories of water: process water and ingredient water. Process water is that which indirectly comes into contact with the final product, such as water used for rinsing after chemical disinfection or rinsing of bottles. Ingredient water is that which comes into direct contact with the product, such as water that actually becomes part of the final product. In both cases, the water is considered to be a raw material just like milk. As such, the conversion and inspection processes for this material are clearly defined.

For ingredient water, this customer insists on reverse osmosis (RO) filtration. There is an opportunity for prefiltration to the RO unit. The need for prefiltration is determined on a case-by-case basis depending on location and inlet water condition. Potential areas of opportunity are shown in Figure 2.

Ingredient Water Treatment

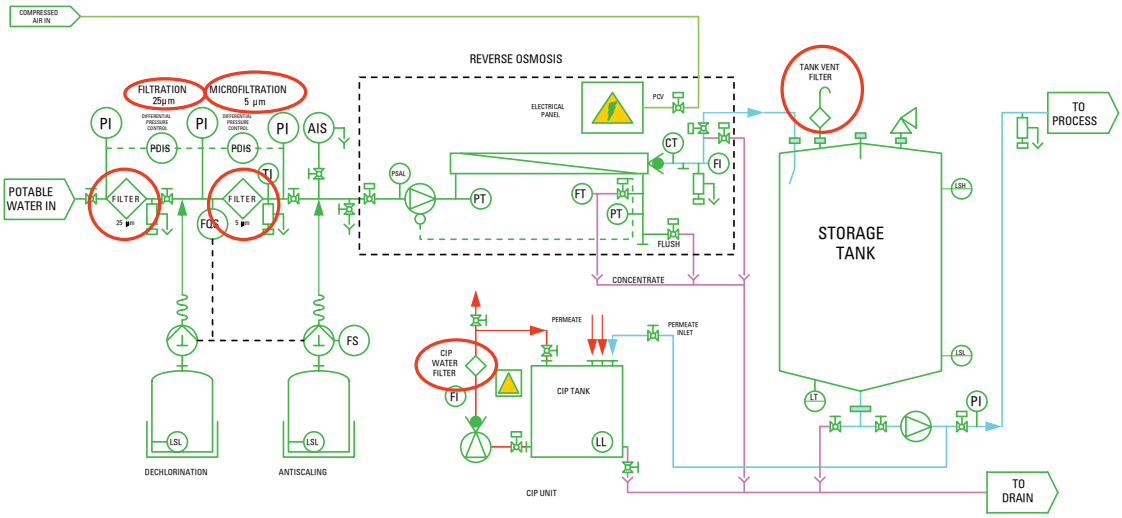

FIG. 2

Donaldson is currently the supplier-of-choice for process water filtration. As shown in Figure 3, Donaldson supplies PP prefilters and PF-PES final filters, both in PF-EG 0900 (12-round, 3-high) housings. Even process water, like ingredient water, must be filtered to sanitary condition, so the PF-PES filters are rated at 0.2 micron. Steam filters for SIP are also shown in the diagram.

Process Water Treatment

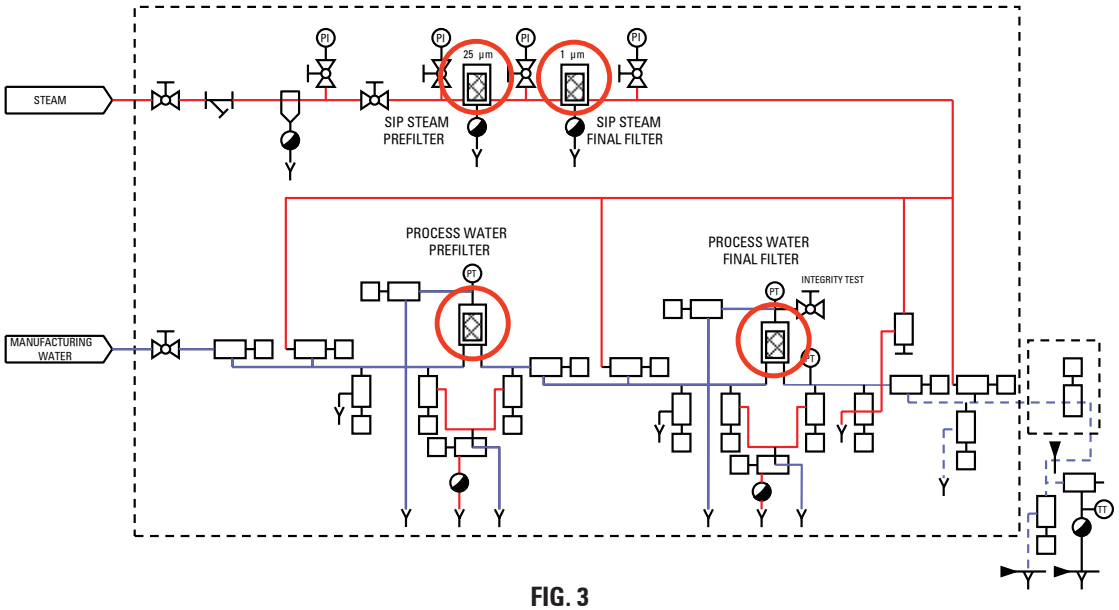

FIG. 3

Dairy product applications offer a multitude of filtration opportunities as indicated above and in the attached diagrams. Often, first-fit products are specified by A&E firms, as is the case here. This highlights the need for contact with such firms as well as the ultimate end-users.