

## Advanced Water Treatment Solutions

Backwash water at 2, 3 & 4 minutes



## THE ENVIROWASH® SYSTEM

Among the key features to any of the Filtronics *Electromedia*® filters is the efficient use of water for backwash. With backwash to filtration ratios of less than one percent, our *Envirowash*® system is the most enviro-friendly backwash/reclaim system on the market today.

Assuming a raw water turbidity of 15 NTU or less, we conservatively estimate the interval filter run time duration to be 18 hours. The backwash to filtration ratio for a typical 750 gpm application is:

- 750 gpm x 18 hours x 60 minutes = 810,000 gallons produced.
- The backwash cycle lasts four minutes at 1800 gpm and surface wash lasts one minute at 180 gpm. (The backwash rate assumes 20 degrees Centigrade temperature of the source water).
- The total volume of water used for surface wash and backwash total 7,380 gallons.
- The backwash to filtration ratio is 7380/810,000 = 0.009 or 0.9% for a 99+% efficiency.

Filtronics systems have a very short recovery after a backwash. The filter system produces a filtrate of less than 0.2 NTU in only five minutes after a backwash, not only adding to the efficiency of the system but quickly producing a high water quality to the potable water system.

Assuming a two minute rinse to waste water cycle, the overall efficiency is 98.9%.

To further reduce the amount of water lost, many applications include a complete *Envirowash*® backwash/reclaim system to recover more than 99% of the water used for backwash. That is more water to be sold to the customer, meeting the same effluent requirements as the raw source.

### BENEFITS OF THE ENVIROWASH® SYSTEM

- LOWER ELECTRICITY/PUMP COSTS
- LOWER SEWAGE COSTS
- WATER COST SAVINGS
- REDUCED SPACE
- WATER CONSERVATION
- ENVIRONMENTAL SAVINGS

## Advanced Water Treatment Solutions



## RECLAIM MODULE

Filtronics *Electromedia*® / filter system uses the *Envirowash*® reclaim module to automatically recycle the water used for purge (filter to waste) and backwash. Normally, more than 99% of this water is recovered through decanting and pumping.

The primary equipment arrangement for reclaim is to have a holding tank for three backwash volumes. Water used for purge and backwash is put into the reclaim tank to allow for the treatment residuals from backwash to sink to the bottom of the tank, allowing the supernatant to be recycled. Any time the water level is above the reclaim start level set point and a filter is in filtration, the reclaim timer begins its cycle. At the end of the timing cycle the reclaim pump will start as long as a filter is in filtration. The reclaim pumps are started by the Filter Control Panel.

The US EPA limits the flow of reclaim water to 10% of the water being filtered for surface water applications. Most of the states have applied this universally to all treatment plants for well and surface sources. On a typical Filtronics system, the supernatant from the reclaim tank has lower contaminant levels than the source water.

The reclaim water, when blended with the well water at the headworks of the treatment system will slightly increase the chlorine residual. Typically, we see it rise between 0.1 to 0.3 mg/L depending upon the site.

Treatment plants that have one or two wells with one or two filters, typically utilize one pump for each filter and well combination. Facilities with higher flow rates use variable speed pumps to reduce the number of pumps needed.

The reclaim sequence consists of backwash into the reclaim tank, purge into the reclaim tank, settling time during filtration (20 to 60 minutes depending upon contaminants), pumping of the supernatant via a floating strainer until the reclaim tank level is dropped to the start/stop setpoint.

The treatment residuals are collected in the bottom of the tank and may be discharged to a sanitary sewer. The operator is able to choose automatic or manual operation of the drain at the Filter Control Panel. In the automatic mode, the number of backwashes is counted until it reaches a number selected by the operator. The residuals are drained out after the reclaim pump has shut down. The free flowing residuals are no more than 1.0% solids.

**THE USE OF A COMPLETE  
ENVIROWASH® BACKWASH/RECLAIM  
SYSTEM ALLOWS THE UTILITY TO  
REDUCE THE WATER LOST FROM  
TREATMENT TO LESS THAN 0.01%.**

3726 E. Miraloma Ave., Anaheim, CA 92806  
Phone: 714-630-5040 • Fax: 714-630-1160  
email: [info@filtronics.com](mailto:info@filtronics.com) • [www.filtronics.com](http://www.filtronics.com)