

# **WWETCO FlexFilter™**

*High-Rate Compressible Media Filter*



**WWETCO**

Simplified Wet Weather and Tertiary Treatment.



# Versatile Filtration

The WWETCO FlexFilter™ uses a synthetic compressible media in a high rate filtration process. The compression of the media is through a lateral hydraulic force applied from the incoming liquid. This unique method of compression eliminates mechanically actuated internal components and provides for a tapered compression of the media. The varied porosity of the compressed media bed allows for increased filtering capacity as well as the ability to treat flow streams with higher solids concentrations.

In addition to its ability to handle higher solids loadings, the FlexFilter™ has a backwash system with air scour and specialized backwash troughs to minimize the volume of backwash water needed. The combination of tapered media compression, porosity gradient within the media bed and a low flow backwash system make the WWETCO FlexFilter one of the most versatile and efficient filters on the market.

## APPLICATIONS

Due to the tapered packing density of the filter media, the WWETCO FlexFilter™ can be applied where other filters cannot.

**CSO/SSO** – The FlexFilter™ efficiently treats water from CSO and SSO systems without the need for chemical or polymer. The diverted storm flow enters the FlexFilter and immediately receives treatment. The operation of the FlexFilter eliminates the need for a startup period or special operations.

**Storm Water Runoff** – By removing potential contaminants, the FlexFilter™ improves the quality of receiving streams as well as the population of desired organisms in the water shed.

**Primary Treatment** – Able to handle higher solids loading rates, the FlexFilter™ can be applied as primary treatment. The compact layout and increased loading rates of the filter can dramatically decrease the required footprint versus conventional primary treatment while providing improved removal rates.

**Tertiary Treatment** – Applied in tertiary treatment, the FlexFilter™ can deliver an effluent quality with turbidities consistently less than 2 NTU. The tapered compression of the media and scoured backwash make the filter ideal for chemical flocs for removing phosphorus.

**Raw Water Pretreatment** – The FlexFilter™ filter can serve as a pretreatment for raw water sources prior to a conventional water treatment process.

**Industrial Water Pretreatment** – The FlexFilter™ filter can be applied for the pre-treatment of incoming plant water as well as the pre-treatment of water prior to UF or RO systems.

**Dual purpose for Tertiary and CSO/SSO Treatment** – The FlexFilter™ delivers the functionality to handle the sporadic nature of storm events. The versatility of the filter allows it to be applied as the tertiary treatment following the secondary process during normal operation. During a storm event, gates can be used to convert a portion or all of the tertiary filter into a storm flow filter. As the storm surge subsides, the filter switches back to tertiary treatment for continued use.



**WWETCO FlexFilter™ Heard County Water Reclamation**

# How It Works

The WWETCO FlexFilter™ is a simple gravity system requiring no moving parts. The influent liquid applies a hydrostatic force to the compression bladder causing the media to compress. The tapered compressions provides for densely compressed media at the bottom that graduates to an expanded bed toward the surface. As the liquid flows onto the top of the media, the larger particles are trapped in the upper portions of the filter. As the liquid works its way down through the media, the smaller particles are captured.

This porosity gradient within the filter bed allows for a more effective use of the entire media bed and allows for a higher mass load to the filter prior to backwash. As the filter bed becomes plugged, the influent level increases and signals the need for a backwash. For the backwash, the feed to the filter cell is stopped, which allows the media to uncompress. The air scour is initiated along with a small amount of backwash water. The length of the backwash cycle is operator adjustable. Once cleaned, the filter cell is put back in service.



**Top of WWETCO Filter before backwash.**



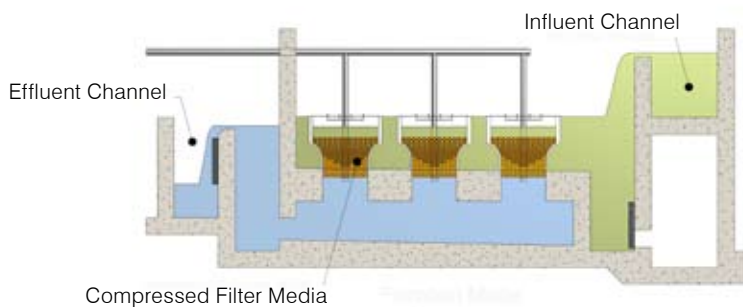
**Initial backwash air surge cleans the top perforated plate.**



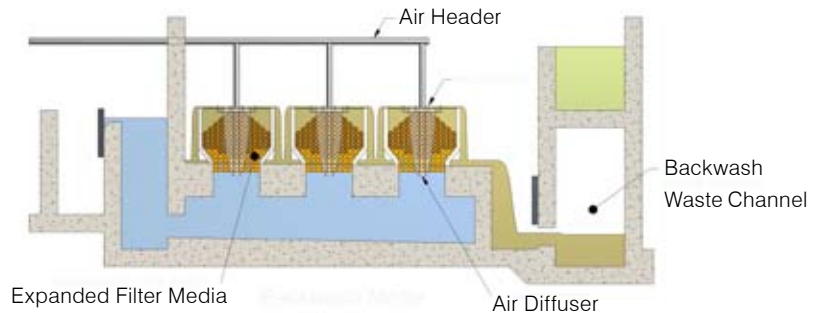
**WWETCO Filter media after 30 minutes of low flow rate backwashing.**

## ADVANTAGES of the FlexFilter™:

- Can be applied for a number of uses or even combined use
- Passive design that does not require special attention or chemicals
- No moving parts
- Low backwash requirements
- No ramp up time
- High loading rates
- Minimal backwash
- Simple and effective



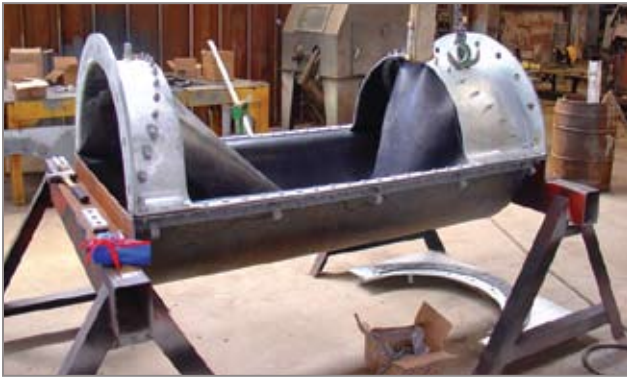
**Filtration Mode**



**Backwash Mode**



**Pilot Program & Rental Equipment.** WWETCO offers multiple pilot and rental options. Whether you need a trial of the equipment for your specific application or renting a filter to clean a water source, contact WWETCO for additional information.

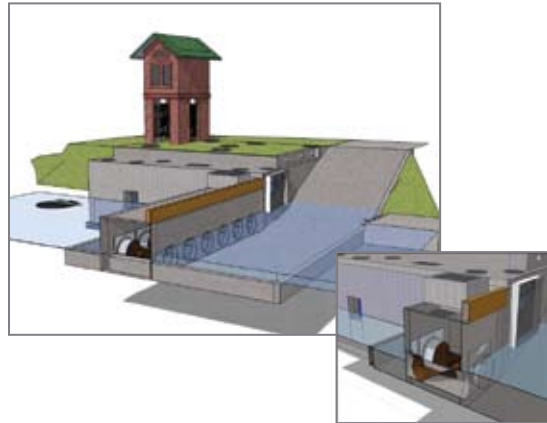


### **FlexFlow™**

The FlexFlow™ Control Valve includes a self-adjusting membrane used for normalizing flows. The design of the valve allows the passage of a predetermined flow rate. As the remaining liquid is contained, the hydrostatic pressure is applied to the membrane allowing for the gradual increase in flows to pass. The valve can be installed in the outlet of detention ponds, storm catchments, treatment plant inlets and streams. The non-clogging design of the FlexFlow Control Valve eliminates the need for routine cleaning or maintenance.

The FlexFlow™ has applications in all of the following conditions:

- Dry Weather
- Wet Weather
- Excess Flow
- Peak Flow



### **Other Related Equipment**

- CleanFlo™ Multi-Rake
- ROMAG Deflection Screen
- Vortex Grit Removal
- Full Line of Headworks
- Biological Treatment Options
- Clarification
- Digestion
- Tertiary Treatment



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