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| CITY OF MOLALLA WATERC:\Users\nlennartz\Desktop\Logos for City\2 inch Emblem Spot.jpgTREATMENT PLANT | FILTER BACKWASHPROCEDURE  | DATE ISSUEDJUNE-2018 |
| SOP #20 |

***STANDARD OPERATION PROCEDURE***

**Filter #1 Overview**

For complete procedure please refer to the Microfloc Trident O&M Manual supplied by US Filter.

After a period of time, sufficient solids will be trapped in the filter to increase the headloss to 8 feet of water at which time a backwash cycle is started. A backwash can also be initiated by a timer set by the operator on the HMI, by manual means (push button on the control panel), or by high effluent turbidity at a set point adjusted by the plant operator on the HMI.

The first portion of the backwash cycle is a surface wash step. This surface wash quickly breaks up the top of the filter and allows the bed to become fluidized and fully expanded early in the backwash period. It also provides the agitation required to effectively “scrub” and clean media particles.

**Backwash flow rate**

The mixed media bed is backwashed at a nominal rate of 15 gpm per square feet. During backwash, the Mixed Media fluidizes and expands by approximately 20-30% or 6-9 inches. The backwash flow rate is set by the Honeywell Controller in the Motor Control Room (for example 4200 gpm). A backwash cycle is complete after 35,000 gallons.

**Filter #3 & #4 Overview**

For complete procedure please refer to the complete Environmental Conditioners Inc. Service Manual supplied by the manufacturer.

After a period of time, sufficient solids will be trapped in the filter to increase the headloss to 8 feet of water at which time a backwash cycle is started. A backwash can also be initiated by a timer set by the operator on the HMI, by manual means (push button on the control panel), or by high effluent turbidity at a set point adjusted by the plant operator on the HMI.

For Filter #3 & #4 the surface wash has since been retrofitted to resemble the newer style of surface wash where the surface wash arms are above the Media. The Plant was originally designed with a subsurface wash. The surface wash arms were in the anthracite layer which was determined by previous plant operators to be less effective at agitating the anthracite layer.

**Backwash flow rate**

The mixed media bed is backwashed at a nominal rate of 16 gpm per square feet. During backwash, the Mixed Media fluidizes and expands by approximately 20-30% or 6-9 inches. The backwash flow rate is set by adjusting the Bray Control Valves for each filter and set at approximately 2300 gpm per filter. A backwash cycle is complete after 17,000-18,000 gallons for each filter or at approx. 35,000 gallons for the complete cycle including both filters.