GUIDELINES

HOT WATER SANITIZATION
OF
MICROZA OLT-5026/OLT-5026G MODULES

SUMMARY

Sanitization

Temperature:	90 ºC
Minimum Flux:	4-6 gpm
Time:	minimum 1 hour
Reject:	5-10 % (discharged to drain)

NOTE: BACK PRESSURE WILL PROBABLY BE REQUIRED ON THE PERMEATE SIDE IN ORDER TO OBTAIN THE MINIMUM FLUX PER MODULE.

Flushing

Temperature:	ambient
Reject:	5-10%
Flux:	min 18 gpm
Time:	typically 30 - 60 minutes (the higher the flux, the shorter the time)

INCREASING WATER TEMPERATURE

Gradually increase the temperature of the feed water to the UF system to 90 ºC over a 15 minute period.

Communicated to Omid Mahdavi by Dr. Vivien Krygier of Pall Corp. on 8/31/2010

If a hot water tank is used as opposed to an in-line heat exchanger, start feeding the water to the UF system when the water temperature in the tank reaches 50 - 75 ^{o}C. Hold the temperature for about 10 minutes until the temperature of the UF modules and system reach the same level. Then re-start heating the water in the tank while feeding the water to the UF system to raise the temperature up to 90 ^{o}C.

SANITIZATION

During sanitization, it is very important to keep the temperature throughout the system at 90 ^{o}C. The minimum flux of 4-6 gpm may have to be increased if the temperature of the entire system cannot be maintained at 90 +/- 2 ^{o}C due to heat loss.

During sanitization, the reject (concentrate) from the UF modules contain high levels of particles which have been cleaned off the membrane surface by the hot water. Therefore, the reject should be discharged at a rate of 0.4 gpm per module.

LOWERING OF TEMPERATURE

The temperature should be gradually decreased from 90 ^{o}C to ambient over a 15 minute period.

If the hot water is rapidly discharged from the UF system, the hot air left in the UF modules will quickly dry up the membrane resulting in membrane damage.

FLUSHING

The UF system should be flushed until acceptable TOC and particle counts are achieved.

General Guidelines for Sanitizing

Pall Microza Ultrafiltration Modules

Hydrogen Peroxide Sanitizing Conditions

Installation

Flush modules with 18 megohm-cm water. Monitor TOC in permeate to determine total flush time.

Sanitization Conditions

Hydrogen Peroxide:	**1-3%**
Transmembrane Differential Pressure:	**14.5 psi**
Exposure Time:	**1 hour**
Temperature:	**Ambient**
Reject:	**10%**

Return permeate to chemical feed tank.

Rinsing Cycle

Flush with ultra pure water (18 megohm-cm) at 14.5 psi transmembrane differential pressure for at least 1 hour. Monitor permeate resistivity.

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