Membrane Cleaning Secret #1 - Cleaning Silt and Solids

Many RO systems lack adequate pretreatment to handle large amounts of solids coming to them whether on a regular basis or in the case of an upset. These solids can become lodged in the feed spacers of the lead membranes and if caught early, can often be flushed out.

Evidence of this kind of fouling could be if the pressure drop (dP) across the 1st stage (feed to interstage) of your system increases quickly. If you see this pressure increase in a short period of time, a cleaning may be in order. The longer the system runs, the further into the membranes the solids will be driven or pushed.

Before introducing chemicals during cleaning, it is often beneficial (and cheaper) to flush the membranes with RO water. If you have silt or solids making their way through your pretreatment, and plugging the front of your RO system, rinsing or flushing in a reverse direction can often help to clear the feed spacer channels. If your system is set up to clean with hoses, this might be easier to do than if it is hard plumbed. If it is hard plumbed, you might be able to install a bypass where this can be done on a regular basis if needed. We have helped several customers with this type of modification.

Once it is setup to flow backwards, using RO water, flush the system for about 5-15 minutes in a reverse direction. Reverse direction means concentrate to feed, not product to feed! After this has been flushed for 5-15 minutes, the CIP system should be configured as normal to begin cleaning. Often this short flushing is sufficient to break a large portion of solids loose and get them out of the system.

If you are unsure how to set this type of procedure up, contact Membrane Services for more help with this cleaning tip. We can help you with the proper flow and pressure recommendations.