

# Process Solutions

*Water and Process Fluid Purification*

## Our Silver Anniversary!

Wow! Time sure flies when you're having fun! As hard as it is to believe, **Process Solutions Inc.** is celebrating our **25<sup>th</sup>** anniversary this year! It's certainly been an interesting, sometimes wild ride through good times and some not-so-good times. Through it all, the company has continued to adapt to industry trends and the needs of our customers.

To celebrate, we are planning several special events to recognize those who are responsible for our success – our customers! These Customer Appreciation events will take place in various locations over the course of 2019. Invitations will be sent out as the details of each event are finalized.

We would like to take this opportunity to thank all of you who have contributed to our success with your confidence in us and your continued business. We couldn't have done it without you!



## Our Latest Addition!

**Process Solutions, Inc.** is pleased to introduce Mr. Seth Gintert, who recently joined the company as a Field Service Engineer. Seth earned a degree from The Ohio State University in Environmental Science with his area of specialization in water. He came to us from a competitor where he started up, maintained, and serviced water systems in industrial, high purity, and power plant applications. Please join us in welcoming Seth to the **Process Solutions** team!

### ***About Our Organization...***

At **Process Solutions, Inc.** we're committed to being your full-service supplier of water treatment products, systems and services. We do this by providing our customers with high quality products, great service and *all at competitive prices*. Please feel free to call us with your feedback and suggestions as to how we can be of service to you.

## New Product for Water Recovery!

While most of us associate Ionpure with Continuous Electrodeionization (CEDI) processes to produce ultrapure water, the needs of the industry are expanding to include water recovery, reclaim and reuse. One of the most common reclaim applications is treating RO concentrate to minimize the waste discharged to the sewer and reuse the treated water in other processes. The NEXED™ module is an electro dialysis module designed to do just that.

The NEXED™ modules use electrochemical desalination, which is a variation of electro dialysis, designed for higher salinity levels – up to 15,000 ppm! It is an ion exchange membrane process with an adjustable output quality, to accommodate variable feedwater quality, or partial TDS removal by adjusting the power input. Systems designed with the NEXED™ module are capable of higher recoveries and have potential applications such as:

- Brackish water TDS reduction
- Reverse Osmosis Reject Recovery
- Water Reuse
- Variable Salinity Applications

The NEXED™ modules are available in several different sizes and can be used in parallel or in series to meet a wide variety of flow requirements and applications.

For additional information or application-specific questions, please contact **Process Solutions Inc.** at **513-791-3338**.



*The NEXED™ Electrodesalination modules are designed to handle feedwaters up to 15,000 ppm!*

## Offsite UF Module Cleaning!

If you're operating an ultrafiltration system, you're likely familiar with the periodic clean-in-place requirement (similar to reverse osmosis). However, most CIP skids for UF systems have limited purified water and recirculation capabilities that are critical for a quality cleaning process. Over time, this will contribute to premature replacement of the UF modules.

**Process Solutions Inc.** has developed a partnership with a cleaning facility that performs offsite cleaning of UF modules. The facility has the capability of adapting to various manufacturers' modules, and providing pre- and post-testing data as well. For more difficult to clean modules, agitation with air and extended soaking prior to recirculating the cleaner are available. The cleaners used are *Avista Technologies* MF/UF cleaners, which are buffered so they're safe for use with a variety of manufacturers' modules. Additionally, by recovering modules that were destined for landfill, you are reducing your impact on the environment – and your budget!

For additional information, price quotes, or to see what this process can do for you, please contact your **Process Solutions Inc.** Water Treatment Specialist!



*If you can't get your UF modules clean in place, offsite cleaning is available!*

## Chlorine vs. Chloramines?

More and more frequently, municipalities are converting to chloramines for disinfection rather than free chlorine, at least during the summer months. The reason for this conversion is that chloramines are more stable, so they are not consumed as quickly and therefore last longer in the city's distribution system as a disinfectant. One of the drivers for this conversion is that chloramines reduce the likelihood of forming trihalomethanes (THMs), which are potential carcinogens caused by the interaction of chlorine with organic contaminants in the water. Chloramines are formed by reacting chlorine with ammonia, so the result of injecting chloramines may create a slightly higher pH in the water as well.

What does this mean for your process water system? If you're operating an ion exchange system or reverse osmosis system, you already understand the negative impact that chlorine can have on your membranes and/or resins. But how can you adapt for the use of chloramines in the feedwater to your system? Chloramine removal is affected by water temperature, contact time, and feedwater pH.

If you're injecting sodium bisulfite for dechlorination, the injection point should be evaluated to ensure that there is sufficient reaction time for the bisulfite to neutralize the chlorine component. In many cases, the injection point can be relocated further upstream to permit sufficient time for the reaction to occur prior to contact with the membranes or resins.

If you're using activated carbon filtration for dechlorination, be aware that removal of chloramines requires additional contact time with the carbon media for adsorption of the chloramine, compared to free chlorine. The flow rates per cubic foot of carbon media should be evaluated to determine whether sufficient contact time is available. Chloramines also consume more of the carbon's adsorption capacity, so you may want to re-evaluate your carbon media and/or the frequency of rebedding the filter. If you're using a conventional carbon media (coal-based or coconut shell) you are likely finding that chlorine breakthrough is occurring sooner than it was when the city was using chlorine. You can replace the carbon more frequently, or you can consider using catalytic carbon instead.

Catalytic carbon is created by modifying the surface structure of standard grades of carbon through processing with gas at high temperatures. The resulting product accelerates chemical reaction times; in existing equipment it provides more complete removal of the chlorine component at the same flow rates; for new equipment it can mean less carbon and smaller equipment than if a conventional carbon product is used. If you choose to design around conventional carbon, be sure that the equipment is sized to provide sufficient contact time for complete dechlorination. And regardless of your dechlorination process, be sure that you are measuring *total* chlorine rather than *free* chlorine!

For further information or assistance in evaluating your carbon filters' ability to remove chloramines, please contact your **Process Solutions, Inc.** sales representative!



*Catalytic activated carbon is effective in removing chloramines from water*



*If your city uses chloramines, be sure you're measuring for Total Chlorine rather than Free Chlorine*



## Who Says It's Not Easy Being Green ?

If you would prefer to save a tree and receive our newsletter electronically, please email us at [sales@psiwater.com](mailto:sales@psiwater.com) and we'll add you to our electronic distribution list. Thank you!

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We're on the Web!

*See us at:*

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