

# Process Solutions

Water and Process Fluid Purification

## Introducing....

**Process Solutions, Inc. is pleased to introduce our newest team members!**

Ms. Felicia (Harmer) Tonnis joined our organization the first of the year. Felicia is based in Indianapolis, and will be serving customers in Indiana, Tennessee, Southwest Michigan, and the Chicago area. Many of our current customers have worked with her as an account manager for the *Sievers* brand of Total Organic Carbon (TOC) analyzers, and she comes to us with a wealth of experience in pharmaceutical, biotech and critical water utilities applications.

Mr. Jamey Miller has joined our team as our Field Service Engineer, responsible for hands-on service, system startup, preventive maintenance, troubleshooting, and training. Having worked for a well-known system manufacturer for a number of years, he is highly experienced with ion exchange, reverse osmosis, CDI/EDI, UV sterilizer systems, and instrumentation, as well as PLC's and control systems.

Please join us in welcoming Felicia and Jamey! We're sure you will find both of these individuals to be extremely service-oriented and customer focused. They are both excited about the opportunity to work with **PSI's** customers, and we expect our customers will truly enjoy working with them.

## A "Certifiable" Honor!!

TOP 2013  
BUSINESS



DiversityBusiness.com



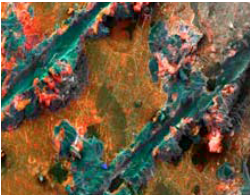
We're pleased to announce that **Process Solutions, Inc.** has been selected as a 2013 "Top Business" again this year by *DiversityBusiness.com*. The "Top Business" list consists of privately held companies which truly differentiate themselves in the marketplace. As part of this process, we were also named one of the 50 Top Diversity-Owned Companies in Ohio and one of the Top 100 Privately-Held Companies in Ohio.

And for the *fifth* consecutive year, we've been honored by the U.S. Commerce Association with the "Best of Cincinnati" for Water Purification! Nationally, less than one-tenth of 1% (1 in 1000) of the 2013 awards recipients qualified as Five-Time awardees. We'd like to thank all of those who continue to support us in our efforts to provide our customers with quality products and services.

## The Latest in Analytical Techniques!

**Process Solutions, Inc.** would like to share a new development in membrane troubleshooting and analytical techniques from *Avista Technologies!*

Chromatic Elemental Imaging is a breakthrough technology that uses a beam of focused electrons to accelerate across the surface of a foulant sample and interacts with the sample's inorganic elements to emit electrons. Since each element has its own unique atomic shell, a particular element's electron emission generates a characteristic X-ray spectrum that allows for its identification. Each element is assigned a color and a high resolution image is generated of the sample. The intensity of the color is largely influenced by the element's concentration in the sample.



*The latest analytical technique for diagnosing membrane fouling!*

CEI can uniquely identify the elements in a mixed foulant sample containing a number of organic deposits, as well as their concentrations and their locations on a membrane surface. This technique, in combination with the typical testing performed in a membrane autopsy, can identify the precise chemistry that may be fouling your membrane system. And once it's identified, the pretreatment scheme can be "tweaked" to control the fouling problem!

For further information on this technique and what it can do for **you**, please contact your **Process Solutions, Inc.** sales representative!

## In the Good Old Summertime!

***We've said it before, but it bears repeating!*** Summer has arrived – time for fun in the sun, and re-tuning your water system for warmer temperatures! What does warm water mean for your system operation?

If you're operating media filters or ion exchange systems, it means you need to adjust your backwash flow rates. Warmer (i.e. less dense) water requires a higher flow to achieve the same amount of bed expansion when you backwash, to effectively remove particulates. Conversely, when it gets cold again you'll need to cut the flow rate back so you're not backwashing the media out of the tank(s).

For membrane systems, warmer water means more permeate flow, lower operating pressure and slightly higher salt passage. If your feed pump is equipped with a VFD, this is already taken care of for you; if not, you may need to throttle a few parameters.

Warmer water can also speed up biological contamination. Carbon beds are notorious for growing "bugs", and with warmer water the rate of growth is accelerated. We also see more accelerated rates of biofouling in membrane systems when the weather gets warm, so if you're not addressing this in your cleaning regimen, a cleaning/sanitization plan is a good thing to have and be ready to implement if you need to.

Be aware that drought conditions, when they occur, can wreak havoc with your water system, especially on surface water supplies. Evaporation means more solids (both dissolved and suspended) are going into your system, so you may need to change filter cartridges more often, backwash more frequently, or clean your membranes more often than usual.

If you need to stock up on support products or need assistance getting your system ready for summer, give us a call at **(513) 791-3338!** And if any of the warm weather "gotchas" getcha, we're available to help!



*Summer heat can have a huge impact on your water system!*

## The Storage Tank Blues.....

Recently, we've had a number of folks inquire about controlling "stuff" growing in their RO/DI water storage tanks. There are good practices for keeping biological growth under control, and depending upon the design and materials of your tank, good practices for sanitization.

While storing treated water is a great way to accommodate fluctuations in demand, it's important to note that treated water is typically dechlorinated (unless you're adding chlorine) and has no means of inhibiting bacteria growth. Particularly when the tank is not completely filled, the tank walls are particularly susceptible. The tank contents must be kept in a dynamic state, recirculating through a UV disinfection unit and polishing filter, and taking into consideration the velocity in the recirculation piping. The UV sterilizer does a great job of killing the "bugs", but unless the bodies are removed by a 0.2 or 0.1 micron filter, you're just putting food for the live bugs back into the tank.

There are a number of accessory items which help to maintain purity in stored water, which we hope were part of the original installation. The good news is that even if they weren't, they can be added on after the fact. For example:

- \* A spray ball in the top of the tank, which directs the recirculated water down the tank walls; and/or is often used for CIP procedures.
- \* A vent filter equipped with a 0.2 micron hydrophobic filter cartridge to prevent airborne contaminants from entering the tank.
- \* A conservation vent, which prevents evaporation of the tank contents to the atmosphere.
- \* A backpressure control valve, located in the return line.
- \* A return conductivity/resistivity sensor, located in the return line.
- \* Return block-and-bleed valves, to divert out-of-spec quality water to the drain.

These accessory items are frequently available as "kits". It should be noted that the vent filters, in particular, **must be sized for the specific application** to prevent collapsing the tank as its contents are pumped out.

Sanitizing procedures include chemical sanitization for FRP or polyethylene tanks, and heat sanitization (as well as chemical) for stainless steel tanks. If heat is used, the tank must be allowed to cool *gradually* to prevent quick condensation of steam vapor inside the tank, which could result in the tank collapsing.

For ultrapure water applications, nitrogen blankets may be used to prevent water quality (resistivity) degradation as well as maintaining biological purity.

For further information or for assistance in evaluating a potential application, contact your **Process Solutions, Inc.** sales representative!



*Stainless steel storage tanks*



*Fiberglass storage tanks*



### 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!

## New Antiscalant Technology!

### *Process Solutions, Inc.*

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We're on the Web!

*See us at:*

[www.psiwater.com](http://www.psiwater.com)

We're pleased to introduce another innovative product from *Avista Technologies*, the leader in membrane solutions!

**Vitec 8200** proprietary antiscalant/dispersant is an all-polymer blend which does not contain phosphate or phosphonate chemistry. It is designed to inhibit scale and disperse colloidal particles in applications where phosphate discharge is limited or restricted. This formulation is compatible with both cellulose acetate and polyamide membranes. It can be injected neat or diluted and used in a wide variety of feedwater sources. This product has also been approved for use in systems producing drinking water by NSF International under NSF/ANSI Standard 60.

For further information on this or any of the *Avista* products, contact your **Process Solutions, Inc.** sales representative!

### ***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.



*Vitec 8200 and other Avista products are available in a variety of package sizes*

### **PROCESS SOLUTIONS, INC.**

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