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Headworks Screens, Washer Compactors, Grit Removal, Grit Classifiers, Grit Washers, Circular Clarifiers, Odor Control

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Submersible Mixers, Recycle and Chopper Pumps, Jet Aerators, Digester Mixing Systems

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Wet Well Aeration System to Reduce Grease Buildup, Odors, and Corrosion

PURAFIL
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QUESTIONS?

If you have questions about PWEA, please contact the PWEA Administrative Office at 717-642-9500 or by email at pwea@pwea.org.
# Conference at a Glance

(As of May 22, 2024)

Visit [www.pwea.org](http://www.pwea.org) for the most current program schedule.

## SUNDAY, JUNE 16

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:00am-3:00pm</td>
<td>Community Service Project</td>
</tr>
<tr>
<td>4:00pm-5:00pm</td>
<td>Registration Opens</td>
</tr>
<tr>
<td>6:00pm-7:30pm</td>
<td>Vendor Get-Together at Legends Sports Bar</td>
</tr>
</tbody>
</table>
|                     | [https://thepennstaterhotel.com/legends-restaurant](https://thepennstaterhotel.com/legends-restaurant) | with Exhibits & Sponsors Committee

## MONDAY, JUNE 17

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00am-5:00pm</td>
<td>Registration Opens</td>
</tr>
<tr>
<td>7:00am-8:00am</td>
<td>Continental Breakfast in Hallway</td>
</tr>
<tr>
<td>7:30am-8:30am</td>
<td>Keynote Presentation</td>
</tr>
<tr>
<td>8:40am-12:00pm</td>
<td><strong>Morning Technical Programs (DEP #9482)</strong></td>
</tr>
<tr>
<td></td>
<td><em>Biosolids – Rm 206</em></td>
</tr>
<tr>
<td></td>
<td><em>Collection Systems – Rm 207</em></td>
</tr>
<tr>
<td></td>
<td><em>Engineering &amp; Construction – Rm 208</em></td>
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<tr>
<td></td>
<td><em>Stormwater – Rm 107</em></td>
</tr>
<tr>
<td></td>
<td><em>Utility Management &amp; Government Affairs – Rm 109</em></td>
</tr>
<tr>
<td></td>
<td><strong>Workshops</strong></td>
</tr>
<tr>
<td>8:00am-5:00pm</td>
<td><em>Activated Sludge Refresher – Day 1 of 2 – Rm 105</em></td>
</tr>
<tr>
<td>8:45am-12:00pm</td>
<td><em>Back to Basics – Water Quality Monitoring Course – Rm 106</em></td>
</tr>
<tr>
<td>9:45am-10:15am</td>
<td>Exhibit Hall Open with Break Refreshments</td>
</tr>
<tr>
<td>12:00pm-1:00pm</td>
<td>Exhibit Hall Open with Complimentary Lunch</td>
</tr>
<tr>
<td>12:30pm-1:00pm</td>
<td>PWEA Annual Business Meeting with Dessert &amp; Coffee – Senate Room</td>
</tr>
<tr>
<td>12:45pm – 4:45pm</td>
<td><strong>Workshop</strong></td>
</tr>
<tr>
<td></td>
<td><em>Responsibilities of Clean Water Professionals – Rm 108</em></td>
</tr>
<tr>
<td>12:55pm-1:00pm</td>
<td>5-Minute Vendor Presentations</td>
</tr>
<tr>
<td>1:00pm-3:30pm</td>
<td>Professional Operators (PO) Plant Tour</td>
</tr>
<tr>
<td>1:00pm-4:45pm</td>
<td><strong>Afternoon Technical Programs (DEP #9483)</strong></td>
</tr>
<tr>
<td></td>
<td><em>Biosolids – Rm 206</em></td>
</tr>
<tr>
<td></td>
<td><em>Collection Systems – Rm 207</em></td>
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<tr>
<td></td>
<td><em>Engineering &amp; Construction – Rm 208</em></td>
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<tr>
<td></td>
<td><em>Stormwater – Rm 107</em></td>
</tr>
<tr>
<td></td>
<td><em>Utility Management &amp; Government Affairs – Rm 109</em></td>
</tr>
<tr>
<td>2:40pm-3:40pm</td>
<td>Exhibit Hall Open with Break Refreshments</td>
</tr>
<tr>
<td>3:40pm-4:45pm</td>
<td>Collection Systems Mobile Sessions in Exhibit Hall</td>
</tr>
<tr>
<td>4:45pm-5:45pm</td>
<td>President’s Reception in Exhibit Hall</td>
</tr>
<tr>
<td>5:45pm-7:00pm</td>
<td>Annual PWEA Awards Ceremony Reception – Dean’s Hall 1</td>
</tr>
<tr>
<td>7:15pm-9:30pm</td>
<td>Tailgate Dinner and Cornhole Tournament – Dean’s Hall 2 &amp; Terrace</td>
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## TUESDAY, JUNE 18

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00am-5:00pm</td>
<td>Registration Opens</td>
</tr>
<tr>
<td>7:30am-8:30am</td>
<td>Exhibit Hall Open with Continental Breakfast</td>
</tr>
<tr>
<td>7:55am-8:00am</td>
<td>5-Minute Vendor Presentations</td>
</tr>
<tr>
<td>8:00am-11:45am</td>
<td><strong>Morning Technical Programs (DEP #9484)</strong></td>
</tr>
<tr>
<td></td>
<td><em>Collection Systems – Rm 207</em></td>
</tr>
<tr>
<td></td>
<td><em>Engineering &amp; Construction – Rm 208</em></td>
</tr>
<tr>
<td></td>
<td><em>Industrial Waste Pretreatment – Rm 107</em></td>
</tr>
<tr>
<td></td>
<td><em>Privatization &amp; Cybersecurity – Rm 206</em></td>
</tr>
<tr>
<td></td>
<td><em>Utility Management &amp; Government Affairs Program – Rm 109</em></td>
</tr>
<tr>
<td></td>
<td><em>Professional Operators Privatization &amp; Cybersecurity – Rm 203</em></td>
</tr>
<tr>
<td></td>
<td><strong>Workshops</strong></td>
</tr>
<tr>
<td>8:00am-11:30am</td>
<td><em>Wastewater Treatment – Rm 108</em></td>
</tr>
<tr>
<td>8:00am-5:00pm</td>
<td><em>Activated Sludge Refresher – Day 2 of 2 – Rm 105</em></td>
</tr>
<tr>
<td>9:40am-10:40am</td>
<td>Exhibit Hall Open with Break Refreshments</td>
</tr>
<tr>
<td>11:15am-11:45am</td>
<td>Biosolids Mobile Sessions in Exhibit Hall</td>
</tr>
<tr>
<td>11:45am-1:00pm</td>
<td>Exhibit Hall Break with Complimentary Lunch</td>
</tr>
<tr>
<td>11:45am-1:00pm</td>
<td>Student Research Poster Presentations</td>
</tr>
<tr>
<td>12:55pm-1:00pm</td>
<td>5-Minute Vendor Presentations</td>
</tr>
<tr>
<td>1:00pm-4:45pm</td>
<td><strong>Afternoon Technical Programs (DEP #9485)</strong></td>
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<td><em>Collection Systems – Rm 207</em></td>
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<td></td>
<td><em>Engineering &amp; Construction – Rm 208</em></td>
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<tr>
<td></td>
<td><em>Industrial Waste – Rm 107</em></td>
</tr>
<tr>
<td></td>
<td><em>Privatization &amp; Cybersecurity – Rm 206</em></td>
</tr>
<tr>
<td></td>
<td><em>Professional Operators – Rm 109</em></td>
</tr>
<tr>
<td>2:40pm-3:40pm</td>
<td>Exhibit Hall Open with Break Refreshments</td>
</tr>
<tr>
<td>4:45pm-5:45pm</td>
<td>Beer &amp; Pretzels Reception in Exhibit Hall</td>
</tr>
<tr>
<td>4:45pm-5:45pm</td>
<td>Operator Olympics in Exhibit Hall</td>
</tr>
</tbody>
</table>

## WEDNESDAY, JUNE 19

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>7:00am-8:30am</td>
<td>Continental Breakfast in Hallway</td>
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<tr>
<td>7:00am-12:00pm</td>
<td>Registration Open</td>
</tr>
<tr>
<td>7:55am-8:00am</td>
<td>5-Minute Vendor Presentations</td>
</tr>
<tr>
<td>8:00am-11:15am</td>
<td><strong>Morning Technical Programs (DEP #9486)</strong></td>
</tr>
<tr>
<td></td>
<td><em>Engineering &amp; Construction – Rm 107</em></td>
</tr>
<tr>
<td></td>
<td><strong>Workshops</strong></td>
</tr>
<tr>
<td>8:00am-11:30am</td>
<td><em>Biosolids Workshop – Rm 108</em></td>
</tr>
<tr>
<td>8:00am-11:30am</td>
<td><em>Introduction Locator Program – Rm 105</em></td>
</tr>
<tr>
<td>8:30am</td>
<td>Annual Golf Tournament</td>
</tr>
<tr>
<td>9:00am-1:00pm</td>
<td>PA DEP Water/Wastewater Operator Certification Exam</td>
</tr>
<tr>
<td>9:40am-10:10am</td>
<td>Break Refreshments in Hallway</td>
</tr>
<tr>
<td>11:30am</td>
<td>Conference Concludes</td>
</tr>
</tbody>
</table>
DEWATERING
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POWER GENERATION
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24 HOURS
7 DAYS A WEEK
365 SERVICE
A Message from the PWEA Leadership

On behalf of the PWEA Board of Directors and the 2024 Conference Committee, we invite you to attend PWEA’s 95th Annual Technical Conference and Exhibition (PennTec 2023) on June 16-19 at the Penn Stater Conference Center Hotel in State College, PA.

This year’s Conference Program includes a wide range of topics related to water quality. In addition to the Conference technical sessions, we are also presenting workshops which have been approved by the PA DEP for additional contact hours for water and/or wastewater operator licenses. By attending these workshops, you could earn up to 19.0 DEP Contact Hours, or up to 19.0 Continuing Education Hours, in just a few days!

A very important part of the Conference is the vendor exhibition. By visiting the exhibits, you will gain insight into new and innovative solutions and discover new products and equipment that will help you do your job in a more efficient and safer manner. We encourage you to talk to the vendors about what is most important to you.

The Conference includes many networking opportunities for you to meet and interact with your colleagues. The Students & Young Professionals (SYP) Committee is organizing a Community Service Project for Sunday. The Annual PWEA Golf Tournament will be on Wednesday again this year.

On Monday, the Professional Operators Committee will host a Plant Tour. Also on Monday is the President’s Reception; the Annual PWEA Awards Ceremony & Reception; and the Tailgate Dinner & Cornhole Tournament.

On Tuesday, there is the Women in Water Luncheon; the Beer & Pretzels Reception; and Operator Olympics.

We believe the PennTec Conference will provide everything you need under one roof – education, vendor contacts, and networking. We look forward to seeing you there!
WE PROUDLY PARTNER WITH ENVIRONMENTAL EQUIPMENT & TOOL LEADING MANUFACTURERS WITHIN OUR INDUSTRY TO ASSIST YOU TO GET THE JOB DONE RIGHT.
Keynote Presentation

Hand Over Fist: Overcoming the Five Main Challenges to Change

Monday, 7:30am-8:30am

George Hawkins arrived as the General Manager of the District of Columbia Water and Sewer Authority in 2009 in the middle of a crisis. The utility was voted the worst customer service agency in Washington, DC at the same time the American Society of Civil Engineers rated water and wastewater both D-, the lowest grade given. George panicked when he realized the five central obstacles to change – which are common to any public infrastructure. George will describe how he and his team were able to overcome each obstacle, becoming one of the most innovative and highly respected water utilities in the country. He will highlight universal principles that can guide any transformative change, learned from almost unbelievable stories from the frontlines of public service in the nation’s capital. George will also add commentary on the selection of his non-profit Moonshot Missions as a National Environmental Finance Center and his observations about how to structure effective technical assistance to help disadvantaged communities access federal and state funding.

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<table>
<thead>
<tr>
<th>CITY</th>
<th>ADDRESS</th>
<th>Suite</th>
<th>PHONE</th>
<th>FAX</th>
</tr>
</thead>
<tbody>
<tr>
<td>PITTSBURGH</td>
<td>2600 Boyce Plaza Rd Suite 218</td>
<td></td>
<td>(412) 221-1200</td>
<td>(412) 221-5952</td>
</tr>
<tr>
<td>CANFIELD</td>
<td>7 Court Street Suite 210</td>
<td></td>
<td>(330) 533-5531</td>
<td>(330) 533-6857</td>
</tr>
</tbody>
</table>

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Special Events

Penn State’s Sustainability Experience Center

Sunday, 11:00am-3:00pm

The community service project at PennTec will be at Penn State’s Sustainability Experience Center.

The nine-acre Sustainability Experience Center lies on the edge of Penn State’s University Park campus and provides a living laboratory for students, faculty, and the community to research and learn about sustainability. The site allows different projects to explore food, energy, water, land, and community systems.

The site is home to the campus Community Garden and five ongoing research and outreach projects hosted by various departments and colleges in the university.

Volunteers will be doing basic gardening and clean up tasks around the Sustainability Experience Center.

Volunteers are asked to bring their own work gloves and pruning shears or snips, if possible. Water, snacks, and lunch will be provided in addition to a brief facility tour following the volunteer activities.

Participation is open to anyone; conference registration is not required. Volunteers are asked to wear long pants, closed toe shoes, and to dress for the weather. The Project will be held rain or shine.
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610-481-9979

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610-275-7400

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Special Events

Annual PWEA Golf Tournament

Wednesday, 8:30am Shotgun Start

Join your colleagues for a friendly game of golf at the Penn State Golf Course (White Course) in State College, PA. The course is located about 15 minutes from the venue. Refreshments and prizes will be provided. Net proceeds from the tournament will benefit PWEA’s Operations Challenge Program.

Cost is $120 per person (or $450 per foursome), and includes greens fee, golf cart, lunch and refreshments. You must register by May 31st; on-site registration is not available for this event. Appropriate golf attire is required.

(To qualify for the foursome rate, all four names must be included on one registration form and accompanied by full payment. You may not register at the foursome rate using individual registration forms.)

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Improves Dewaterability
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- Proven aeration system components for long life with minimal maintenance.

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- Independent mixing and aeration for optimized process control and efficiency.

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- Meets regulations while reducing operational costs.
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- Combines equipment, controls, training, support and service.

ICEAS™ SBR
- Proven SBR capability with low lifecycle cost.
- Minimal maintenance requirements through years of operation.
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Casperon Activated Sludge Solution
- Custom designed to meet increased flow or nutrient removal requirements.
- Adaptable to a variety of activated sludge processes.
- Saves energy by varying dissolved oxygen and aeration intensity while maintaining solids in suspension with the VEMA controller.

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Special Events

Vendor Get-Together

Sunday, 6:00-7:30pm

Exhibitors are invited to attend this informal gathering organized by the PWEA Exhibits & Sponsors Committee. Come meet the committee and PWEA leaders at Legends Restaurant & Sports Bar. Details will be sent to all confirmed exhibitors via email, closer to event date.

PWEA Annual Business Meeting

Monday, 12:30-1:00pm

Conference attendees are invited to attend and participate in the Annual Business Meeting. The Board of Directors welcomes input from everyone. PWEA members will vote on Officer positions.

Coffee and dessert will be available during the Annual Business Meeting.

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Special Events

Plant Tour
Hosted by the Professional Operators Committee
Altoona Water Authority Westerly Treatment Facility

Monday, 1:00-3:30 pm

The wastewater from the City of Altoona and a portion of Logan Township and Allegheny Township is conveyed to the treatment facilities known as the Westerly and the Easterly Treatment Plants. The annual average flow of the Westerly Facility is 10.8 MGD with a permitted design hydraulic capacity of 16.2 MGD. This facility is capable of handling flows of up to 60 MGD+ during wet weather. The Westerly treatment facilities provide advanced secondary treatment capability normally removing 95% of organic and suspended solids.

Both treatment facilities are controlled and monitored by identical computerized process control systems. Each facility is made up of five unit processes: preliminary treatment, flow equalization, activated sludge process, clarification & disinfection and, biosolids handling process. Plant operators, through the computerized control system screen, can monitor the entire treatment process, or they can manually control equipment from this centralized system. Flows, tank levels, valve positions, pH and dissolved oxygen levels, and the operation of blowers, pumps, flow gates and equalization tanks are all controlled automatically from data fed to the computer.

The Altoona Water Authority has upgraded the Westerly Treatment Facility into a Water Resource Recovery Facility (WRRF) that converts High Strength Organic Waste (HSOW) into renewable energy in the form of biogas and upgraded the solids handling equipment to further treat wet biosolids to a Class A Exceptional Quality product.

Major Treatment improvements include:
• New High Strength Organic Waste Receiving Station
• New High Strength Organic Waste and TWAS Blend Tank
• New Anaerobic Digesters and Digestion Equipment
• New Digester Control Building
• New Biogas Handling Systems
• New Digestate Storage (repurpose of existing tank)
• Refurbishment of Existing Gravity Belt Thickener
• Replacement of Existing Belt Filter Press with New Centrifuge
• New Centrate Holding Tank
• New Cake Receiving Station, Cake Conveyors, Storage Bunker, and Pumps
• New Cake Drying System including Dried Cake Loadout

Be sure to register in advance to reserve your seat on the bus. A limited number of tickets may be available on-site, subject to prior sale. The cost is $35 per person. Bus will begin boarding at 12:30 pm and will depart the hotel at 12:45.

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Special Events

**PWEA Annual Awards Ceremony & Reception**

*Monday, 5:45-7:00pm*

The Annual Awards Ceremony honoring your colleagues who have won prestigious state and national awards will take place following a short reception. This event is open to all Conference attendees.

*Pre-registration is required. There is no charge to attend. Includes hors d’oeuvres and a drink ticket.*

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**Tailgate Dinner & Cornhole Tournament**

*Monday, 7:15-9:30pm*

The PWEA Students & Young Professionals Committee will host a fun and friendly evening of networking, cornhole tournament, food, drinks and great prizes. A tailgate themed dinner buffet will begin at 7:15pm and cornhole teams will be randomly formed beginning after dinner. The event is open to all experience levels, professionally and competitively. Attendees are encouraged to don their favorite team’s tailgating attire.

*Pre-registration is required. Tickets are $55 per person. Dinner and a drink ticket are included.*

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Women in Water Luncheon

Tuesday, 11:45am-1:00pm

Join your fellow colleagues for the third annual Women in Water Luncheon. This luncheon will feature networking opportunities and discussion with prominent women who are dedicated to water quality and who will share their personal and professional challenges and successes, work/life balance, and education experiences.

Pre-registration is required. There is no charge to attend.
CREATING A BETTER WATER ENVIRONMENT, TOGETHER.

Greater Hazleton Joint Sewer Authority Treatment Plant
Hazleton, Pa.
Special Events

PWEA Student Research Poster Contest

Tuesday, 11:45am-1:00pm

The PWEA Research Committee reviews student research submissions and invites qualifiers to participate in the Poster Contest. After judging by faculty and practicing engineers, the top three poster presenters in both undergraduate and graduate categories are chosen. Posters will be available for viewing by Conference attendees. Awards will be presented at the Student Research Program.
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Special Events

Operator Olympics

Tuesday, 4:45-5:45pm

This is a fun activity based on some real Olympic events, but with a wastewater twist. Games may include:

Bowling, using a ball from a pump and BOD bottles; Plunger Toss, tossing small plungers into a bucket; Golf Ball Chip, chipping golf balls into a toilet; Hockey, score a goal through a toilet seat; and Turd Toss, throw (plastic!) turds into a bucket.

Can you think of a better way to spend the afternoon?

There is no charge and pre-registration is not required. This is a competitive event and prizes will be awarded.
Experience

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- Retrofitting of Existing SBRs
- Conversion of Conventional Style Activated Sludge Design
- Extended Aeration Treatment Plants
- Tertiary Filters—Multimedia Downflow Design
- Denitrification Filters (Anoxic Style)
- Membrane Bioreactors (MBR)
- Moving Bed Bioreactors (MBBR)
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- Packaged Surface Water Treatment Systems
- Pre-Engineered, Prefabricated Pump Stations

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Special Events

Back by popular demand is the PWEA Biosolids Beauty Contest!

Across from Booth 97

The Exhibitor & Sponsor’s and Biosolids Committees are once again hosting this fun contest at the 2024 PennTec Conference. Please be sure to stop by the designated Booth (location to be announced) in order to view the submissions and to see how creative our Biosolids Professionals can be! The winner will be announced during the lunch break on Tuesday, June 18. Who will be crowned winner of the PWEA 2024 Biosolids Beauty Contest?

Please contact Chis via email or phone (732-425-7489) with any questions.

No entries will be accepted after June 7. All displays must be turned in at the Booth (location to be announced), on or before 9 am on Monday June 17, 2024; and must be complete and ready for viewing upon delivery.

Contestants will not be permitted to make any changes and/or modifications to their displays once they are turned in.

NOTE: Contest is only open to those individuals who are registered to attend PennTec 2024.

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Within WEF and local Member Associations (MAs), members work to help each other develop and grow professionally, while building valuable relationships with industry partners and prospects. Joint WEF/local MA membership ensures your access to professional resources at global and regional levels.

impact the future
WEF’s committees are a driving force behind the organization’s work. Committee participation is a great opportunity to get involved, make a difference in the organization and contribute to our work within the sector.

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Technical Program Details
An extra 5 minutes has been added between sessions to allow attendees time to move between Technical Program rooms, if they wish to do so.

MONDAY MORNING

BIOSOLIDS PROGRAM – RM 206

Emerging Challenges & Resiliency
Moderators: Charles Winslow, GHD;
Richard Valiga, Tully Environmental

8:40am-9:10am
Solids Management Optimization through Design and Operation
Speaker: Rudy Kilian, PE, Carollo Engineers, Inc.
Solids processing represents a significant portion of the capital and operating costs of wastewater treatment. The presentation will present design features and operating strategies to reduce the costs of biosolids processing and disposal.

9:15am-9:45am
Evaluation of Innovative Biosolids Management in the Circular Water Economy (WRF #5169)
Speaker: Asa Lewis, PhD, Hazen & Sawyer
In response to rising challenges of contaminants of emerging concerns, greenhouse gas emissions, and limited land availability, many innovative biosolids management alternatives have emerged, providing utilities with new treatment perspectives. A holistic evaluation framework was developed to evaluate the potential of innovative biosolids management alternatives in addressing emerging challenges.

10:20am-10:50am
Nation Wide Assessment of Cost Impacts to the Clean Water Agencies Triggered by PFAS
Speaker: Pooja Sinha, Stantec Consulting Services Inc.
Wastewater utilities are a collection point for per- and polyfluoroalkyl substances (PFAS). Significant programmatic and capital infrastructure investments will be required to comply with existing and anticipated PFAS regulations on discharged effluent, residuals, and biosolids. This NACWA sponsored study was conducted in 2022-2023 to obtain better quantification of these costs.

10:55am-11:25am
Treating PFAS in Biosolids
Speaker: Micah Blate, Hazen and Sawyer
This presentation will provide an update on PFAS in biosolids, with specific emphasis in treatment alternatives. Results from full-scale demonstrations of gasification/pyrolysis and supercritical water oxidation will be presented.

11:30am-12:00pm
Investigations of Microplastics in Biosolids – A Case Study in Philadelphia
Speaker: Vijay Bhatia PhD, Philadelphia Water Department
The morphology and composition of microplastics in biosolids was investigated. Morphology observed included fibers, fragments, films, foam, and beads. Major composition contributors included PET (17.5%), polycrylates (12%), polystyrene (8.3%), poly(ethylene-propylene)-diene (4%), cellulose triacetate (3%), polypropylene-polyethylene-copolymer (3%), polyamides (3%), and polyurethanes (2.3%). In addition, softening agents, additives, and plasticizers have also been identified.

COLLECTIONS SYSTEMS PROGRAM – RM 207

REhabilitation
Moderators: Roger Lehman, Weston Solutions;
Chris Patackis, Brown & Caldwell

8:40am-9:10am
Providing Long-Term Service Life Renewal and Infrastructure Conflict Resolution
Speaker: Sean P. Riley, PE, HDR
When two 30-inch water transmission mains were identified within the crown of a large diameter sewer beneath a park redevelopment project, HDR developed sewer and watermain designs under the Pittsburgh Water and Sewer Authority Large Diameter Sewer Rehabilitation Program to ensure long-term infrastructure service life beneath the to-be redeveloped park.

9:15am-9:45am
A Long Shot – Non-Circular CIPP of the 110-year-old Front Street Interceptor
Speaker: Jeffrey Bowra, PE, PMP, Capital Region Water
ASCE MOP 145 was the basis for this CIPP rehabilitation of CRW’s Front Street Interceptor originally constructed in 1911. Using over 25 liner ‘shots’, the contractor installed 14,400 LF of CIPP liner in the non-circular interceptor using steam-cured and water-cured CIPP methods.

10:20am-10:50am
Innovative Auger Boring Approach for Rehabilitating a Century-Old Combined Sewer
Speaker: Jeff Lenner, PE, Mott MacDonald
Mott MacDonald presents an innovative sewer rehabilitation project conducted in the City of Pittsburgh. Learn how an Auger Boring sewer installation was used to renew a century old VCP combined sewer that is over 30-ft deep. This presentation shares lessons learned and offers a blueprint for addressing similar complex sewer rehabilitation challenges.

10:55am-11:25am
I&I Control Using Chemical Grouting in Princeton, NJ
Speaker: Andrew Filippi, P.E., Sewer Engineer, Municipality of Princeton
The Municipality of Princeton, New Jersey chose chemical (acrylamide) grouting as the primary technology used in their Mini-System #35 Sanitary Sewer Rehabilitation Project. The objective of this presentation is to demonstrate the benefits of using chemical grouting for inflow and infiltration reduction and increasing the useful life of a sewer by sealing and stabilizing the pipe envelope, discuss the history and drivers behind Princeton’s choice of rehabilitation technologies, and share lessons learned on the project.

11:30am-12:00pm
Innovative Use of Expanding Polymer Grout in Water and Wastewater Facilities
Speaker: William D. Friedah, PE, Utility Services Group, Inc.
Expanding Polymer Grout has been used for years in the reduction of I&I, however there are new and innovative solutions and products to assist Operators and Engineers in maintaining collection and treatment facilities. Learn the basics of what is possible and what has been completed in infrastructure rehab and maintenance.
ENGINEERING & CONSTRUCTION PROGRAM – RM 208

Engineering Tools & Methods
Moderators: Scott Armbrust, American Water; Nickolas Hines, Material Matters

8:40am-9:10am
Design Tools to Effectively Collaborate with Engineers, Owners, and Contractors
Speaker: Matt Crow, PE, Hazen and Sawyer
This presentation will provide an overview of innovative design tools that are available to engineering firms and utilities in order to develop a higher level of interaction and collaboration than in years past. Platforms such as HoloBuilder and BIM 360, which allow a direct link to BIM 3D models, will be presented.

9:15am-9:45am
Solving the Municipal Wastewater Puzzle in the Way that It Wants to be Solved – The Key to Project Success
Speaker: Joseph M. Gianvito, P.E., KLH Engineers, Inc.
The Rochester Area Joint Sewer Authority recently completed a $53M project. There were many challenges along the way, including consent order deadlines, site constraints, soil contamination, and the pandemic. However, the project was completed in a way where all parties involved were left with a sense of pride and fulfillment.

10:20am-10:50am
Design Tools to Effectively Collaborate with Engineers, Owners, and Contractors
Speaker: Steven Kestel, APG-Neuros
Model Predictive Control (MPC) is an improvement on traditional PID based aeration control methods. This case study describes how a MPC system with Ammonia Based Aeration Control logic (ABAC) improved the accuracy of control while reducing the dissolved oxygen at the MWR North Treatment Plant.

10:55am-11:25am
Taking Your Data to the Next Level: How to Best Model Full-Scale PFAS Removal with GAC
Speaker: Adam Redding, PhD, Calgon Carbon Corporation
Granular activated carbon (GAC) is typically evaluated for PFAS removal from water using rapid small-scale column tests (RSSCTs) or pilot studies, and test results are often misinterpreted. This presentation will cover how to best use this information, and the EPA's GAC breakthrough model, AdDesignS, to estimate GAC full-scale performance.

11:30am-12:00pm
Case Study – Overview of Protecting 4 Pennsylvania Wastewater Treatment Plant Clarifier Launder from Premature Corrosion
Speakers: Heather Stiner, Market Segment Manager – Water Infrastructure and Toby Butler – Business Development Representative, both with Sherwin-Williams
This presentation will provide an overview of a clarifier launder project completed in Reading Pennsylvania. The project consists of protecting the launders from premature corrosion using protective coatings. All steps of the project, including pre-job, surface preparation, coating application and post application will be reviewed. Key takeaways will include: questions and observations to be taken during pre-job; hurdles and necessities during surface preparation; importance of proper coating selection; and post job inspection.

UTILITY MANAGEMENT & GOVERNMENT AFFAIRS PROGRAM – RM 109

Digital Tools for Smarter Water
Moderators: Maria White, PA One Call; Mike Kyle, LASA

8:40am-9:10am
Streamlining and Digitizing Municipal Utility Operations Using GIS and Automation
Speaker: Andrew Tuleya, ARRO Consulting, Inc.
Explore how municipalities can integrate GIS into utility operations. Presentation to include automating, mapping, and digitizing assets and operations through GIS, creating scheduled and event-based notifications to track operations and maintenance activities (including PA One Calls), integrating utility mapping into a digital, mobile-friendly platform, and automating report production.

9:15am-9:45am
From Pipes to Passwords: Asset Management as the Backbone of Cybersecurity
Speaker: Heather Heltzinger, LO, Renegade Solutions, LLC
An exploration of the integral link between asset management and cybersecurity in water and wastewater sectors. The presentation will highlight emerging technologies, evolving regulations, and the practical impact of either implementing or neglecting these essential systems, focusing on risk mitigation and operational efficiency.

10:20am-10:50am
What does a Digital Transformation Take – How Water and Wastewater Agencies are Making the Journey
Speaker: Shawn Dent, PE, Carollo Engineers
A water/wastewater utility initiated a Digital Water System (DWS) project which would guide the organization in their digital transformation. The purpose of the DWS is to develop an open-architecture database/dashboards to provide a nexus for an integrated software system that will provide a “smarter water system” from planning through operations.

10:55am-11:25am
Many Utilities are Moving to Peak Wet Weather Flow Management to Handle Peak Flow & Prevent Untreated Overflows
Speaker: John Dyson, Aqua-Aerobic Systems, Inc.
Utilities must manage peak flows that exceed biological treatment capacity. Cloth media filtration has been successful for this peak flow treatment. The presentation highlights wet weather treatment projects including piloting, permitting, revisions to consent decrees and facility design. It highlights data from a recent pilot study in Harleysville, PA

11:30am-12:00pm
Using AI to Better Understand Your Community Values: Introducing GHDUnpack
Speakers: Elizabeth Cheeseman & Bhavin Bhayani, GHD
Join our session to unlock the true potential of your messy community data – past, present, and future. With AI-assisted engagement reporting, turn community perspectives into your strongest asset. Learn about the global innovation of GHDUnpack™. Richer insights, better decisions, and defensible, data-driven results. Engage your community with confidence – finally!
Technical Program Details

**STORMWATER PROGRAM – RM 107**

**Green Infrastructure & Equity**

*Moderators: Brad Smith, ARRO; Juan Pablo Vicuna Reyes, Stantec*

8:40am-9:10am

**What’s the Hold Up? Assessing Inlet Conveyance in Philadelphia’s Green Stormwater Infrastructure**

*Speaker: Johanna Batterton, Philadelphia Water Department, Office of Watersheds*

Philadelphia’s Green City, Clean Waters initiative includes the management of over 1,200 public GSI systems. Most of these systems convey water through standardized inlets. Water level sensors were deployed at eight of these inlets to monitor changes in water level between GSI systems and inlets to characterize and investigate conveyance.

9:15am-9:45am

**Cracking the Code: Developing GSI Analysis Tools with No Formal Training**

*Speaker: Taylor Heffernan, Philadelphia Office of Watersheds*

The Philadelphia Water Department’s GSI monitoring program is massive in scale. Its capacity far exceeds what would be possible with an exclusively spreadsheet-based toolset. PWD has developed a custom in-house database and scripting software to allow this growth. Other teams stand to boost effectiveness, cut costs, by innovating in this way.

10:00am-10:50am

**Building an Equitable Stormwater Program for an Environmental Justice Community:**

*Speaker: Adi Pise, P.E. HDR, Inc.*

Managing stormwater can be challenging in communities that already face economic hardships, a dilemma often at the forefront of environmental justice communities. However, with determined leadership, federal and state support, and efficient program management, communities can realize success in improving their program. Highlights of the journey of one such Stormwater Authority of the City of Chester, and EJ Community, is presented in this session.

10:55am-11:25am

**Quantifying the Economic and Social Benefits of Nature Based Floodplain Projects:**

*A Case Study in the Saw Mill Run Watershed in Pittsburgh, PA*

*Speaker: Tom Batroney, HDR*

The Saw Mill Run watershed in Pittsburgh, PA is historically prone to dangerous flash flooding. As a result, significant disinvestment has occurred. This presentation will outline an approach for quantifying the economic and social impacts of nature-based flood mitigation strategies.

11:30am-12:00pm

**Challenges and Lessons Learned Dealing with FEMA on Hurricane Ida Disaster Recovery Projects with FEMA Reimbursement**

*Speaker: Vanessa Nedrick, PE, MSEM, Remington & Vernick Engineers*

Navigate FEMA’s reimbursement process confidently with insights from Warminster Township Municipal Authority’s Hurricane Ida recovery projects. Learn to master the Grants Portal, avoid common pitfalls and optimize submissions through real-world case studies. This presentation empowers municipalities and authorities to secure vital disaster relief funds effectively.

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**MONDAY AFTERNOON**

**BIOSOLIDS PROGRAM – RM 206**

**Emerging Challenges & Resiliency**

*Moderators: Charles Winslow, GHD; Richard Valiga, Stantec*

1:00pm-1:30pm

**Understanding the Fate and Destruction Mechanisms of PFAS Under Supercritical Oxidative Conditions**

*Speaker: Sudhakar (Sunny) Viswanathan, 374Water*

This paper details the use of supercritical water oxidation for the elimination of recalcitrant wastes like PFAS in sludge. The study shows that waste destruction is possible without producing any undesired by-products. The studies produced valuable data to support design and deployment of full-scale application.

1:35pm-2:05pm

**Double Your Cake Solids in Under Two Minutes**

*A Performance Review of Elode Drying Technology*

*Speaker: Christopher T. Boyd, Director of Sales, Charter Machine Co.*

Elode drying technology doubles the cake solids coming off of any dewatering equipment in under 1 min by only using electricity. This technology does not use heat or any other fuel, just setting up a DC electric field to realign sludge particles to allow water to drain off and therefore make the already dewatered cake solids much drier. This presentation will review all of the pilot testing data and show the trends, sweet spots, limitations and more. Including full scale installation from Henderson KY that has been running since September 2023.

2:10pm-2:40pm

**PXVNEO – Hydrothermal Carbonization at the Borough of Phoenixville WWTP**

*Speaker: Jeremy Taylor, SoMax Circular Solutions*

Hydrothermal Carbonization is the cornerstone technology in SoMax Circular Solutions’ Resource Recovery Platform for organic wastes. SoMax’s HTC process is a continuous thermochemical process that utilizes moderate temperatures and pressures of ~350ºF – 430ºF (180ºC–220ºC) and less than 580 psi (40 bar). The HTC reaction has variable retention times based on the feedstock from as short as thirty (30) minutes and up to four (4) hours. The product of HTC is a carbon dense solid known as hydrochar.

In 2021, SoMax and the Borough of Phoenixville Wastewater Treatment Plant were Grand Prize winners of the Department of Energy Water Resource Recovery Prize for the design and planned implementation of the first commercial scale Hydrothermal Carbonization (HTC) plant in the United States. The Water Resource Recovery Prize sought scalable, repeatable solutions that can be implemented at small to medium sized wastewater treatment plants across the US, with the goal of recovering 50% more resources from the wastewater.

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Employs High-Solids Digestion to Enable Food Waste Co-Digestion & Advance Energy Neutrality with Lowest Lifecycle Cost
Speaker: Margaret Laub Niehoff, Anaergia
WRRF (Western Water Recycling Facility) incorporated high-solids digestion to cost-effectively expand capacity and avoid new digester build-out. Third-party validation showed healthy high-solids digester operations. WRRF used excess capacity for a food waste co-digestion pilot, setting the stage for the WRRF to advance energy-neutrality and California organic waste diversion mandates to support greenhouse gas reductions.

4:15pm-4:45pm
Waste & Energy Recovery Lead to Sustainability at the Clearwater WWTF
The presentation presents DTMA’s (Derry Township Municipal Authority) recently completed Energy Enhancement project, which includes new biogas management and gas conditioning system, new cogeneration system, digester improvements and high-strength waste equalization basin. The presentation will present operational data of the 1-MW engine sets and project economics (capital costs, annual savings and revenue, etc.).

COLLECTIONS SYSTEMS PROGRAM – RM 207

1:00pm-1:30pm
Planning and Preliminary Design of a 650 MGD Effluent Pumping Station
Speaker: Matt Crow, PE, Hazen and Sawyer
This presentation will provide an overview of the planning, hydraulic modeling, and preliminary design efforts related to the proposed Northeast WPCP Effluent Pumping Station, a 650 MGD wet weather facility mandated by Consent Decree to be constructed and how these fits the flow scheme to meet PWD’s (Philadelphia Water Department) Wet Weather needs.

1:35pm-2:05pm
Pump Station Consolidation (10MGD, 84-inch Micro Tunnel and 10k LF of 24-inch FM)
Speaker: Michael Bisignani, GHD
GHD recently completed the planning, design, and construction services associated with the 36-inch Locust Grove Gravity Sewer, 10 MGD Pumping Station, and 24-inch forcemain. The project driver was to consolidate pumping stations in an effort to address a consent order and renew aged assets which needed upgraded and to address capacities. The focus of this presentation will be on the 84-inch ~1,200-foot microtunnel that passed under a MD DOT roadway, river, and railroad through two very different rock formations. The tunnel ultimately contained a 36-inch carrier pipe. Throughout construction there were many complications which will be focused on such as launching and receiving pit construction, ground water control, carrier pipe installation, and post construction grouting. The owner of the project was Alleghany County, Maryland, and the project was designed by GHD and built by Garney Construction.

2:10pm-2:40pm
Challenges of Installing a Wastewater Pump Station over an Artesian Aquifer
Speaker: Mike Zappone, PE, Carollo Engineers
This presentation highlights the unique design and construction elements of installing a wastewater collection system pump station on a small site with unsuitable soils and artesian aquifers, and adjacent to a stream and wetlands.

3:40pm-4:10pm
Case Study: Using Sewer System Modeling to Aid in Reducing CSO’s in the Borough of Waynesburg’s Sewer System
Speaker: Derek L. Sellers, EIT, Gannett Fleming, Inc.
Sewer system modeling is a useful tool to develop collection, conveyance, and treatment system improvement alternatives. This case study highlights Gannett Fleming’s modeling efforts, development of alternatives, and resulting design of treatment system improvements as part of the Borough of Waynesburg’s efforts to develop a revised Long Term Control Plan.

4:15pm-4:45pm
Assessing Rehabilitation Techniques Through Hydraulic Modeling
Speaker: Julia Manzano, EIT, Arcadis
This presentation will show a novel method for modeling the impacts of manhole, main, tap, riser, lateral, and private-side sewer rehabilitation techniques. It is relevant to programs that assess impact of rehabilitation techniques on I/I. This method allows for countless rehabilitation strategies to be evaluated in a model to develop a catchment-tailored source reduction plans that optimizes cost and I/I reduction, including the ability to differentiate between inflow and rainfall induced infiltration, thereby reducing capital expansion projects.

ENGINEERING & CONSTRUCTION PROGRAM – RM 208

1:00pm-1:30pm
Doing More with Less: Utilizing Owner’s Representatives to Get More Done
Speaker: David J. Kerr, Barton & Loguidice
Water/wastewater infrastructure is deteriorating rapidly. Utilities are also experiencing a reduction in staff. So how do you get more done with less? Annapolis, Maryland is utilizing Owner’s Representatives to help execute design-build contracts to replace infrastructure. This presentation will discuss the process, the necessary information, the benefits/disadvantages, and examples.

1:35pm-2:05pm
You Can’t Build That! Well Maybe You Can: Lessons Learned from Construction Sequencing to Maintain the Operations of a WWTP
Speaker: David Hechmer, PE PA, Mott MacDonald
Working together to finish construction on time and on budget. Lessons learned from designing a construction sequence for the maintenance of plant operations compared to the contractor’s means and methods.
Technical Program Details

2:10pm-2:40pm
Selecting Design-Build to Consolidate and Streamline Multiple Projects at the H.L. Mooney AWRF
Speaker: Meredith J. Welle, PE, HDR
This presentation will focus on why and how the PWCSA selected progressive design-build to rehabilitate, upgrade and modernize key unit processes across the H.L Mooney AWRF, while maintaining service continuity and meeting current and future demand conditions.

3:40pm-4:10pm
DEP Update on wastewater and MS4
Jay E. Patel, P.E., Assistant Bureau Director, PA Department of Environmental Protection
In this session, PADEP will provide an overview of regulatory programs that affect the water industry, and will highlight upcoming or potential changes in water, wastewater, and storm water regulations. This will also be an opportunity for DEP to talk to stakeholders about expectations with the current MS4 Permit.

Stormwater Program – RM 107

Green Infrastructure & Equity
Moderators: Brad Smith, ARRO; Juan Pablo Vicuna Reyes, Stantec

1:00pm-1:30pm
Development? Inevitable. Storms? Unstoppable; Flooding Evaluation of the Route 51 Corridor
Speaker: Ifeanyi Odigboh, P.E., CFM, CPESC, Greenman-Pedersen, Inc.
Communities in the South-Hills region of Pittsburgh have attempted to mitigate flooding over the years to no avail. An integrated 1D-2D model coupled with an innovative integration of SMS-SRH2D and PCSWMM mesh creation will be used to craft a wholistic flood mitigation approach to assess alternative strategies and alleviate flooding.

1:35pm-2:05pm
PA’s Evolving Nutrient Credit Trading Program: An Update
Speaker: Nickolas Hines, Material Matters, Inc.
Material Matters is deeply rooted in Pennsylvania’s nutrient trading program, assisting with the purchase and sale of 250,000+ credits in CY2023. This presentation will discuss the multi-year trends of the program and identify future opportunities for the program – including enhanced engagement of the agricultural sector and interstate trading.

2:10pm-2:40pm
Utility Panel Discussions on the Benefits of Community Outreach
Speakers/panelists: Shannon Q. Drosnock, Executive Director Montgomery Township Municipal Sewer Authority, Mike Kyle, Executive Director Lancaster Area Sewer Authority, Andrew Moore, Director of Plant Operations Lehigh County Authority
The panelists will describe their community and public outreach programs and practices, and discuss positive outcomes as well as potential pitfalls. Based on their experience, they will make recommendations on how other agencies can develop their own community outreach programs, and as a result generate good will.

3:40pm-4:10pm
Stormwater Capture and Use – A Planning Approach, Case Studies and Future Research
Speaker: Elisa Garvey, PE, PhD, Carollo Engineers, Inc.
Based on the findings of a Water Research Foundation project, this presentation explores various opportunities for stormwater capture and use, a decision framework that outlines associated challenges and benefits, and a list of research priorities to support more widespread implementation of stormwater capture and use as a water management strategy.
will report drivers, results, costs, and lessons learned.

Grouting at a fraction of cured in place liner costs. This presentation sources that were subsequently made watertight using chemical testing of mainline joints and lateral taps revealed significant leakage. Pre- and post-rehabilitation flow metering was conducted. Air dry day flow and rainfall derived infiltration effects were felt for several sewershed, where baseline infiltration accounted for 60% of average flow monitoring and evaluation, and defect identification.

**TUESDAY MORNING**

**COLLECTIONS SYSTEMS PROGRAM – RM 207**

8:00am-9:40am - Interactive Workshop
*Moderators: Jeff Cantwell, Flow Assessment Services; Cheryl Paulin, Insituforms Technologies*

PWEA-Town is experiencing high infiltration and inflow in their sewer system and needs your help! This interactive workshop style (but not DEP approved for 1:1 operator CEU) will provide a fun and collaborative approach to exploring various sewer evaluation technologies. Teams will work together to develop an inspection plan to address the system's I/I challenges. Covered topics will include sewer inspection, flow monitoring and evaluation, and defect identification.

**WET WEATHER FLOWS**

*Moderators: Matt Cichy, HRG; Melissa Smith, GHD*

10:40am-11:10am
*Manhole Inflow – The Uncomfortable Reality of How Much of our Peak Wet Weather Flow is Related to Sheet Runoff*
*Speaker: Jim Shelton, PE, Arcadis*

This presentation will show the videos of field trials, demonstrate the inspection rubric, show photographic examples of the inflow defects found, present the percentages of defects encountered, and present the corrective actions taken for each combination of defects found. This presentation will provide operations and engineering staff with specific data and lessons learned directly applicable to every sanitary sewer system.

11:15am-11:45am
*Eliminating Rainfall Induced Infiltration in Sewers with Limited Visual Defects – WSSC’s Pilot Capital Grouting Program Results and Lessons Learned*
*Speaker: Andres F. Villarraga, Project Manager, General Manager’s Office of Performance & Accountability WSSC*

WSSC conducted a pilot program to test the I/I reduction effectiveness, cost value, and longevity of capital grouting techniques to provide long-term structural stabilization and infiltration reduction for their sewer system. They selected 15 miles of collector sewers within a known leaky subbasin (PC05) within their Piscataway sewershed, where baseline infiltration accounted for 60% of average dry day flow and rainfall derived infiltration effects were felt for several days following storms. Additionally, these were areas that had largely been previously CCTV’d and found to contain few structural defects. Pre- and post-rehabilitation flow metering was conducted. Air testing of mainline joints and lateral taps revealed significant leakage sources that were subsequently made watertight using chemical grouting at a fraction of cured in place liner costs. This presentation will report drivers, results, costs, and lessons learned.

**ENGINEERING & CONSTRUCTION PROGRAM – RM 208**

**PFAS**

*Moderators: Mike Sturgill, Trident Actuator; Samantha Schmucker, HRG*

8:00am-8:30am
*Keeping Your ion on PFAS – The Role of Ion Exchange for PFAS Removal*
*Speaker: Margie Gray, PE, Mott MacDonald*

Ion exchange is an important unit process that can be used for PFAS removal. An overview of critical design criteria for PFAS selective ion exchange will be presented.

8:35am-9:05am
*Right-Sizing a WTP PFAS Removal System*
*Speaker: Mark L. Pickering, P.E., GHD*

Right-sizing media to remove PFAS/PFOA from groundwater presents many challenges. This case study presents the City of Aberdeen’s study and bench-scale testing of GAC and Ion Exchange media to determine media most suitable media for delivered water quality. Lab results support the cost estimate and basis of design of the system.

9:10am-9:40am
*Mitigating PFAS transport within Carbon-based Water Reclamation Facilities*
*Speaker: Christopher Curran, P.E., AECOM*

Treatment of per and polyfluoroalkyl substances (PFAS) is a prime example of how water recycling facilities can help break the circulation of forever chemicals. However, implementation of PFAS treatment strategies is challenging within the wastewater matrix. This study presents the effectiveness of PFAS treatment/destruction solutions for integration within carbon-based water reclamation facilities.

10:40am-11:10am
*Getting the Treatment Right – Pilot Study for an 80 MGD PFAS Surface Water Treatment Plant*
*Speaker: Mark A. Hubal, PE, BCEE, Remington and Vernick Engineers*

Installing PFAS treatment for an 80 MGD surface water treatment plant is a 100-million-dollar decision. To obtain the most cost-effective solution, a pilot study is necessary to determine the type and parameters of treatment. This case study will review the pilot process from test design through operation and conclusions.

11:15am-11:45am
*Raccoon Creek WTP PFAS Removal Pilot Project Abstract*
*Speaker: Mark Romers – Director of Water Technologies, ITAC/Filter Magic*

A Class Action Lawsuit was filed on February 23, 2021, in Summerville Georgia, alleging that multiple large companies illegally discharged toxic per- and polyfluoroalkyl substances (PFAS) into the Raccoon Creek watershed contaminating the raw water supply to the Raccoon Creek Water Treatment Plant that provides drinking water to Summerville Georgia.
Pre-engineered packaged pump & control systems, self-priming centrifugal pumps, submersible non-clog pumps, pressure booster systems, flows up to 15,000 GPM with end-suction centrifugal non-clog pumps

Submersible pumps, sludge and slurry pumps, submersible dry pit and axial flow propeller pumps, submersible process mixing equipment

“PolyBlend” - Liquid and dry polymer feed systems
“DynaBlend” – Liquid polymer feed systems

Submersible grinder pumps, solids handling submersible pumps, packaged pumps stations including complete control panel systems.

Bioclere modified trickling filter, iFas & MBBR fixed film wastewater treatment systems to 1,500,000 GPD

Horizontal split case, end-suction water pumps, ASTM 382 / NSF 61 approved for potable water use, dry pit non-clog sewage pumps

Landfill leachate pump systems

”Pipeliner” Sludge conditioning grinder

Verti-Line & Goulds vertical turbine pumps and aftermarket parts

Portable lifting solutions with davit crane systems

Packaged water booster systems for single source responsibility, NSF 61 certified for potable applications, UL508 listed custom control systems


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Challenges and Lessons Learned of Developing and Implementing Intermunicipal Agreements

*Speaker: Vanessa Niedrick, Remington & Vernick Engineers*

Running an industrial pretreatment program can be challenging. The challenges increase for POTWs running programs that span multiple jurisdictions. One of the keys to successful programs lie in the intermunicipal agreements between the POTWs and the contributing/participating municipalities. This session will discuss the challenges and lessons learned in developing and implementing intermunicipal agreements. Multiple case studies will be shared to provide insight and pitfalls to avoid in developing, revising, and implementing intermunicipal agreements.

No Beer Goes to Waste

*Speaker: William Rehkop, P.E., Derry Township Municipal Authority*

The rise of craft breweries in the US has increased more than fivefold since 2010. With water being the key element, water consumption and the wastewater generated from the brewing process is of major importance to both the brewery and the local WWTF. By-products from the brewing process contains highly elevated levels of conventional pollutants (cBOD, TSS, and phosphorus), mainly the yeast, malt, hops, other grains and sugars. This presentation highlights the collaboration between the DTMA and Troegs Independent Brewing to properly manage the high strength wastewater (HSW) loadings from the brewing process on the Clearwater WWTF, to include operational challenges, regulating as a SIU, and HSW diversion to holding tanks for anaerobic digestion at the Clearwater WWTF.

Sesame and Poppy Seeds’ Effect on Zinc Levels in Wastewater

*Speaker: Ashley O’Connor, Entech Engineering*

Entech Engineering investigated elevated zinc levels in the wastewater of an international bakery in Roanoke, VA. Suspecting the source was sesame and poppy seeds in the waste stream, they tested the Dissolved Air Flotation (DAF) system and conducted a 3-day experiment to link seed breakdown to zinc increase.

Working with Industry: Setting and Maintaining Pretreatment Standards Without Losing Business

*Speaker: Nathan Zaugg, Carollo Engineering*

Pretreatment standards are critical to maintaining effectively operating public wastewater management facilities. If these standards are too loose, significant disruption of wastewater facilities and collection systems can occur along with violations of EPA requirements and increased costs borne by rate payers. Conversely, standards that are too strict can drive businesses to relocate elsewhere. Finding the right balance in setting pretreatment standards and rates can enable communities to continue to support businesses without subsidizing their operation. This presentation will help identify key issues for industrial dischargers and how to work together with these entities to achieve this balance.

Buying Smaller Systems

*Speaker: Mike Kyle, Lancaster Area Sewer Authority*

Executive Director Mike Kyle’s presentation at the Lancaster Area Sewer Authority (LASA) will focus on an examination of LASA’s strategic acquisitions and regionalization efforts. Kyle will highlight LASA’s proactive approach to identifying acquisition targets based on thorough assessments of infrastructure, operations, regulations, and finances. He will emphasize the importance of transparency, stakeholder engagement, and mutual benefit in negotiating deals with other public entities.

Selling a system is a tough decision for Governing Boards. It and requires balancing of priorities with the pros and cons of divesting of your asset. Following on from last year’s similar topic, Todd Duerr’s presentation promises invaluable insights into your decision process. He’ll explore strategic advantages and operational efficiencies that privatization can offer. Duerr will outline successful case studies and highlight key considerations, from regulatory compliance, customer satisfaction, impact to rates, and workforce challenges. He will highlight recent updates to the privatization and municipal ownership and operation of wastewater systems. Duerr’s presentation is a must attend for anyone who wants a balanced view of when privatization should be considered as an alternative.

Municipal Authority of Westmoreland County – A Regional Approach

*Speaker: Brian Hohman, RDM*

Brian Hohman of the Municipal Authority of Westmoreland County will offer a concise yet comprehensive overview of regionalizing wastewater utilities. His presentation will unveil a pragmatic approach to consolidating resources and expertise across municipalities. Hohman will explore the benefits of collaboration, from cost savings to enhanced environmental stewardship. Through case studies and practical insights, attendees will gain a clear understanding of the transformative potential of regionalization in optimizing infrastructure and service delivery. Don’t miss this opportunity to streamline operations and drive sustainable growth.
Technical Program Details

10:40am-11:10am
LASA ‘hacked’ Panel Discussion
Speaker: Mike Kyle, LASA
Join Mike Kyle of LASA in a riveting panel discussion exploring the alarming rise of cyber threats targeting wastewater utilities. Delve into the complexities of cybersecurity in critical infrastructure, unveiling vulnerabilities and mitigation strategies. Gain insights from industry experts, unraveling the potential consequences of hacking incidents, and fostering collaborative solutions. Don’t miss this crucial dialogue shedding light on safeguarding essential services against evolving digital threats.

11:15am-11:45am
Best Practices
Speaker: David Stumph, Next7 IT
Embark on an enlightening journey with David Stumph of Next7 IT as he unveils the paramount importance of cybersecurity in water and wastewater utilities. Through his expert presentation, discover the latest best practices designed to fortify critical infrastructure against cyber threats. From robust network defenses to proactive threat intelligence, delve into actionable strategies tailored to safeguarding vital resources. Join us for invaluable insights, empowering utilities to navigate the digital landscape with confidence and resilience.

UTILITY MANAGEMENT & GOVERNMENT AFFAIRS PROGRAM – RM 109

PFAS Regulations & Financing
Moderators: Nick Modany, JMT; Carolyn Klunder, Trinnex
8:00am-11:45am
PFAS: Treatment and Finance Options
Presented by the US Environmental Protection Agency
Speakers: David Henning, PENNVEST; Maagdalene Cunningham, Ruby Stannmyer, Aron Possler, all with EPA R3
The workshop will feature presentations from EPA and PENNVEST leaders on discussing PFAS Treatment and Funding. The presentations will be followed by a Question-and-Answer session. The presentations will include a history of PFAS use and contamination, a focus on the drinking water and wastewater regulatory field, what to expect in the future, and what assistance and funding options are available to drinking water systems and POTWs.

PROFESSIONAL OPERATORS – RM 203

Miscellaneous
Moderators: Milissa Hirst and Jason Marie, Carollo Engineers
8:00am-8:30am
April Fools! – Not So Funny
Speaker: Michael Sedon, Cranberry Township
On April 1, 2023, The Cranberry Township Wastewater Treatment Plant experienced a power outage that created a cascading effect which impacted overall treatment operations. This presentation will discuss the cause, actions taken, recovery and future prevention of similar incidents.

8:35am-9:05am
Activated Sludge Dynamic Filter Achieves Biological Nutrient Removal Performance in a Small Footprint
Speaker: Dennis J. Barnes, P.E., Xylem, Inc.
A 10-month pilot test at a western Pennsylvania wastewater treatment plant validated a new technology for achieving biological nutrient removal (BNR) in a small footprint.

9:10am-9:40am
Screenless IFAS System Eliminates Media Loss and Reduces O&M Costs for the City of Peterborough
Speaker: Lauren Takitch, Entex Technologies Inc.
A screenless WavTex™ IFAS system replaced a failing MBBR system at the 18 MGD City of Peterborough WWTP, eliminating O&M issues such as media breakage/washout while increasing nitrification. This presentation will detail the O&M benefits of the selected WavTex system and detail results from the nine-month process verification following the installation.

10:40am-11:10am
Field Instrument Surveys in Municipal Water-Wastewater Plants
Speaker: Ravi Jethra, Wika
During an instrument audit/field survey, the engineers documented instrument/gauge installations that had failed, or were at risk of failure in an effort to identify areas of concern for the facility. The presentation is essentially sharing results based on findings and experience from the field instrument surveys/audits at numerous water/wastewater (municipal) facilities across North America.

11:15am-11:45am
PA’s Evolving Nutrient Credit Trading Program: An Update
Speaker: Nickolas Hines, Material Matters, Inc.
Material Matters is deeply rooted in Pennsylvania’s nutrient trading program, assisting with the purchase and sale of 250,000+ credits in CY2023. This presentation will discuss the multi-year trends of the program and identify future opportunities for the program – including enhanced engagement of the agricultural sector and interstate trading.

TUESDAY AFTERNOON

COLLECTIONS SYSTEMS PROGRAM – RM 207

CSO
Moderators: Jeff Cantwell, Flow Assessment Services; Cheryl Paulin, Insituform Technologies
1:00pm-1:30pm
Taking on the Challenge of Deep Tunnel CSO Pumping
Speaker: Mike Zappone, PE, Carollo Engineers
This presentation will provide a case history of the 220 mgd City of Portland, OR, Swan Island Combined Sewer Overflow (CSO) Pump Station, with specific emphasis placed on design challenges, and lessons learned through more than ten years of operation.
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1:35pm-2:05pm
CSO Management – From Stone Age to Space Age  
**Speaker:** Llie Hill, PE, Jacobs Engineering Inc.
The presentation discusses the digital transformation of combined sewer overflow (CSO) monitoring in Wilmington, Delaware. The City of Wilmington is modernizing its CSO infrastructures by adding state-of-the-art level and flow monitoring at the CSOs and interceptors to provide 24/7 monitoring capabilities, optimize staff utilization, and build intelligent integrated wastewater management system.

2:10pm-2:40pm
The Perils of Surcharging Interceptors:  
**Unintended Consequences of In-Line Storage**  
**Speaker:** Jim Shelton, PE, Arcadis
This paper identifies the causes, mechanisms of failure, evidence of likely failure of surcharges, inspection techniques to identify pipes at risk if surcharged, and rehabilitation methods once a pipe is thus compromised.

3:40pm-4:45pm
**Quizno**  
**Moderated by Members of the Collection System Committee**
The Sewer Collection System Quizzo offers a unique and fun way to explore the world beneath our streets. Participants gather to test their knowledge of sewer systems through an entertaining trivia game. Questions cover various aspects, from the history and design of sewer networks to their environmental impact and maintenance practices. Quizzos may delve into topics such as the evolution of sewage disposal methods, the importance of wastewater treatment, and strategies for managing urban runoff. By engaging in friendly competition and learning about the vital role of sewer infrastructure, participants gain a deeper appreciation for the unseen systems that contribute to public health and environmental quality in our communities.

**PRIVATEZATION & CYBERSECURITY – RM 206**
1:00pm-4:00pm [break from 2:40pm-3:40pm]
**Continuation of Best Practices**  
**Speaker:** David Stumph, Next7 IT
Don’t miss David Stumph’s presentation from Next7 IT, a continuation of the vital discussion on cybersecurity best practices for utilities. Building upon foundational insights, Stumph will delve deeper into advanced strategies and emerging trends shaping the utility sector’s cybersecurity landscape. Expect comprehensive guidance on threat detection, vulnerability management, and proactive defense mechanisms. Gain actionable takeaways to bolster your utility’s resilience against cyber threats in this informative session led by a seasoned expert in the field of cybersecurity.

**4:15pm-4:45pm**
**Actionable Insights to Fortify Your Utility Cybersecurity**  
**Speaker:** Evan Bukowski of Houk Consulting LLC
Join Evan Bukowski of Houk Consulting LLC for an insightful session on utility cybersecurity best practices. Delve into essential strategies safeguarding utility systems against cyber threats. Explore risk assessment methodologies, network protection measures, and incident response protocols tailored for utilities. Gain actionable insights to fortify your cybersecurity posture, ensuring resilience and reliability in the face of evolving cyber risks. Don’t miss this opportunity to enhance your utility’s cybersecurity defenses with expert guidance and practical solutions.

**ENGINEERING & CONSTRUCTION PROGRAM – RM 208**

**1:00pm-1:30pm**
**The Role of Innovation in the Nation’s Quest for Reduced Effluent Nutrient Loads**  
**Speaker:** John Fraser, PE, Carollo Engineers, Inc.
This presentation will explore various definitions of innovation as they apply to advancing nutrient removal and is centered around examples of Incremental Innovation and Sustaining Innovation – where continuous improvement of existing wastewater processes and already innovative technology can make the effectiveness and efficiency of nutrient removal even better every time.

**1:35pm-2:05pm**
**Optimization of Biological Nutrient Removal in the Sequencing Batch Reactor Process**  
**Speaker:** Kevin Bunting, Parkson Corporation
This presentation will explain how nutrients negatively impact receiving waters through eutrophication and creation of hypoxic regions. Wastewater treatment plant discharges can be a major contributor to water quality degradation in areas such as the Chesapeake Bay and the growing coastal hypoxia in the Gulf of Mexico. Properly designed and operated wastewater treatment plants conversely can provide major enhancements to water quality. The presentation will include an overview of the equipment that is typically used for each of the process steps including aeration systems and floating decanters along with various instrumentation options available for monitoring and process control.

**2:10pm-2:40pm**
**Managing Wet Weather Challenges at the Pleasant Hills Authority WWTP**  
**Speaker:** Robert Dengler, P.E., Gannett Fleming, Inc.
Many sanitary sewer systems across the country are challenged with managing wet weather flows that substantially increase the flow rates to conveyance and treatment facilities that are not equipped to handle such flows. This presentation will describe how a novel flow management strategy enabled the Pleasant Hills Authority to double the flow of their wastewater treatment plant’s peak flow capacity – without the construction of any new treatment tanks.
INDUSTRIAL WASTE PRETREATMENT – RM 107

Moderators: Dave Schlott, ARRO; Jenna Bishop, ARRO

1:00pm-1:30pm
Palmer Township: A FOG Program Success Story
Speaker: Tori Morgan, Entech
Palmer Township struggled with FOG in its collection system and knew what they needed to do: create and implement a FOG Program. Over the past few years, Entech has helped them through all phases of the program, and continues to expand its outreach and success. The key components of a FOG Program will be reviewed, along with how its success is measured in this system.

1:35pm-2:05pm
Reducing Bakery Wastewater BOD – A Case Study Part II
Speaker: Kara Humes, Entech
Large commercial bakeries can discharge a significant organic loading. This session is a follow up to the case study presented at PennTec 2023 where a sweet goods manufacturing industry and the method used to reduce FOG and total suspended solids in the wastewater effluent discharged to a POTW was discussed. This session will expand to the treatment of dissolved sugars with the use of a fluidized bed anaerobic digester to reduce BOD loadings.

2:10pm-2:40pm
Eliminating FOG and Odor in the Collection System – Small & Large Lift Stations
Speaker: Jim Dartez, Reliant Water Technologies
Municipal wastewater collection systems are constantly plagued by lift stations that either collect high amounts of fats, oils, and grease (FOG) and/or intense odor due to H2S buildup in the lift station wet wells. Common solutions have ranged from adding odor masking or FOG emulsifying chemicals, continuous bio-augmentation treatment programs, fine bubble air diffusion systems, automated well washing devices, oxygen sparging systems, and air carbon scrubbing and filtration technologies. In 2016 a new technology was introduced to the collection system market that will, 100% of the time, completely emulsify, and eliminate, FOG caps in wet wells without sending the fats and grease downline, and continuously develop enough dissolved oxygen (DO) in the well water to make H2S odors that are in the water impossible to form.

3:40pm-4:10pm
Pretreatment Program Update
Speaker: Ryan Shuart, US EPA
EPA will be providing a general update to the pretreatment program.

4:15pm-4:45pm
Elements of an EPA Pretreatment Program
Speaker: Aron Possler, U.S. EPA
This discussion provides an overview of the process; discussion of regulations, responsibilities of the industrial pretreatment program, evaluation of facility compliance and the inspection process required for compliance. The Pretreatment Program Update session will expand to the treatment of dissolved sugars in the collection system.

PROFESSIONAL OPERATORS PROGRAM – RM 109

AGS/Miscellaneous
Moderators: Milissa Hirst and Jason Marie, Carollo Engineers

1:00pm-1:30pm
Pennsylvania Department of Environmental Protection Microgrid Study: Defining Statewide Resilience Needs and Evaluating Potential Microgrid Solutions
Speakers: Daniel Eitzman, MPA, Department of Environmental Protection; Amanda Eyer, MS, Energy Programs Office
Exploring and modeling alternative energy technology at water treatment facilities to bring characteristics of energy resilience, reliability, and security during disruptive events. DEP’s Statewide Microgrid Study combines multiple factors through an innovative GIS suitability analysis to prioritize potential locations for site-specific technology implementation.

1:35pm-2:05pm
Mainstream Deammonification via Partial Nitrification-Denitrification-Anammox (PdNA/PANDA): From Pilot- to Full-Scale Applications
Speaker: Dr. Yewei Sun, Hazen and Sawyer
The Partial Nitrification/Denitrification/Anammox (PdNA/PANDA) process innovatively removes ammonia from wastewater, offering substantial energy and chemical savings. However, its applicability, ammonia control, carbon sources, and scalability require further investigation. This presentation will showcase the experiences and lessons learned from multiple pilot-scale and full-scale studies.

2:10pm-2:40pm
Aerobic Granular Sludge (AGS) – Past, Present, and Future
Speaker: John Fraser, PE, Carollo Engineers, Inc.
Aerobic Granular Sludge (AGS) is one of the most intriguing emerging technologies introduced to the wastewater industry. This discussion provides an overview of the process; discussion of enhancements to process; and illustrates several AGS configurations and layouts that provide robust, easy to O&M, logically laid out, and innovative systems.
3:40pm-4:10pm
Data Management and Visualization
Speaker: Mario Benisch PE, HDR
The arrival of new digital tools, data storage and visualization software has brought the need for utility centralized data management into focus. This presentation reviews planning and design considerations for data management and visualization and presents a working example dashboard with a unit process performance evaluation focus.

4:15pm-4:45pm
Landfill Leachate: Mountains of Ammonia
Speakers: Stanley A. Gorski, Jr. – Authority Manager, Western Westmoreland Municipal Authority; Mark J. Wolinsky – Operations and Compliance Manager, Western Westmoreland and Municipal Authority
Representatives from Western Westmoreland Municipal Authority will discuss the challenges presented to operators when the POTW accepts landfill leachate for treatment. While the primary emphasis will be on the high loading imparted by ammonia-nitrogen on the treatment facility, other interesting side effects will also be discussed.

10:10am-10:40am
Greenfield WRRF Delivers Complete Resource Recovery & Community Resilience
Speaker: Saumya Suresh, Anaergia
Greenfield 8 MGD WRRF provides community resilience through utility reliability, resource recovery, and economic development. WRRF takes a holistic approach to waste recovery, providing water recycling to replenish local groundwater basin, leveraging biogas from anaerobic digestion to meet plant energy demands, and converting solids to Class A soil amendment.

10:45am–11:15am
Being Good Neighbors: How Monitoring and Modeling Led to Plant Wide Odor Control Improvements
Speaker: Kelsey Kenel, HDR
Prince William County Authority owns & operates the H.L. Mooney Advanced Water Reclamation Facility (AWRF), located in Woodbridge, VA. In the summer of 2021, odor sampling was conducted at various sources throughout the facility in order to characterize the odors onsite coming from untreated sources and to assess the treatment of the existing odor control facility. This presentation will cover the sampling, monitoring and extensive dispersion modeling results that led to the current design (2022) and future construction (2023) of a 95,000 CFM centralized odor control facility at the AWRF.
Certification

PA DEP Operator Certification

The PWEA Annual Technical Conference has been planned in accordance to the requirements of House Bill 183 (Act 11) and application has been submitted to the PA DEP to provide five (5) wastewater operator contact hours. The PWEA is a PA DEP Approved Training Provider and is permitted to issue continuing education credit to water and wastewater operators.

To ensure you meet continuing education requirements, please refer to the Operator Certification 3-Year Renewal Cycle Schedule. IMPORTANT: Contact hours received outside of your renewal cycle will not count toward your requirements.

To comply with accreditation sponsor requirements, the PWEA will require every attendee to check in and out of each half day timeslot by presenting the contact hour tracking sheet for stamping.

Contact hour tracking sheets will be available at the Registration Area. Review this form very carefully so you are aware of all requirements. You must attend at least 2.5 hours in each half day in order to qualify for contact hours. Each half day session is worth 1.0 contact hour. Use the same contact hour tracking sheet for all Conference sessions.

Completed sheets must be turned in to the PWEA registration staff during posted registration hours. You must provide a photo ID when turning in your tracking sheet. Certificates will be processed and emailed approximately one month after the Annual Conference.

In addition to the Conference contact hours, five workshops have been approved by the PA DEP for additional credit. Go to page 56 for more information. These workshops will run concurrently with the Conference and may have extended hours. You will receive credit for either the workshop or the Conference session, depending on what you attend during each timeslot.

Please note: You may only receive credit for attending a specific workshop once during your renewal cycle. DEP will not count the same workshop more than once within a cycle. Please check your records to be sure you have not previously attended one of these workshops within your current cycle.

Continuing Education for Professional Engineers and Other Professionals

PWEA technical sessions are not pre-approved by state boards for licensed professionals. Therefore, it is not possible to guarantee their acceptance for certification purposes. PWEA will issue transcripts based on the attendance information provided on tracking sheets, which will be available at the Registration Area. Transcripts for Professional Engineers, Geologists, Land Surveyors, and other professionals will show 3.0 Professional Development Hours (PDH) per half day program. Time will be earned in half day increments; partial time will not be issued. This time represents actual classroom hours. It is the responsibility of each individual to submit their PDH credit in the format required by their state licensing boards.
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PA DEP Certification Exams

The Pennsylvania Water Environment Association (PWEA) is offering PA DEP Operator Certification Exams on different dates and locations in 2024. Register for your exam(s) through PWEA’s online registration system at pwea.org. Exam registration fees are: $75 for PWEA Members or $125 for non-members. Payment for exams is by credit/debit card only. Check the website for seat availability.

Exam dates and locations – all exam times are 9:00am-1pm.

- Thursday, May 9, 2024 – Albright College, Reading – Paper Exam
- Wednesday, June 19, 2024 – Penn Stater Conf Center, State College – Paper Exam
- Tuesday, August 20, 2024 – DEP NERO, Wilkes Barre Office
- Tuesday, October 8, 2024 – DEP NERO, Wilkes Barre Office
- Wednesday, November 6, 2024 – Best Western – Lehigh Valley, Bethlehem – Paper Exam

Not a member of PWEA?

Go to www.pwea.org to join online or to download the membership application form. Members receive the PWEA member rate for the PennTec Conference and for PWEA training events.

Member benefits include the Keystone Water Quality Manager, a quarterly technical publication containing legislative updates, design/process operations articles, problem-solving case histories, and advance notice of continuing education. This valuable magazine also highlights current technology trends and issues affecting water quality.

You will also receive by email the monthly PWEA e-Newsletter, keeping you up-to-date on the latest water quality news and PWEA events.

If you have questions about PWEA, please contact the PWEA Administrative Office at 717-642-9500 or by email at pwea@pwea.org.

Job Board

Do You Know About PWEA’s Job Board?

PWEA’s Job Board connects candidates with employers seeking to fill open positions. Employment positions submitted to PWEA are viewable on the PWEA Website at any time. Visit www.pwea.org and click on the “News & Info” tab; then select “Job Board – Open Positions.”
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Workshop Details

The following workshops are being offered during PennTech 2024 on June 16-19 at the Penn Stater Conference Center Hotel in State College, PA. You may add these courses to your PennTec registration, or you may register for your individual course(s) separately. You must register in advance for these courses. All courses are limited to 40 attendees, unless otherwise noted.

**Monday & Tuesday, 8:00am-5:00pm**

**Activated Sludge Refresher Course – Rm 105**

This course is PA DEP approved for 16.0 wastewater contact hours.
Course ID 3884
You must attend both days to earn DEPO credit.
Partial credit will not be awarded.
Instructors: Jeremy Miller, PA DEP; Walter Higgins, US EPA

This course was developed as a preparatory course for the activated sludge certification exam as well as a refresher for certified operators. Students will be engaged in active classroom discussion as well as small group exercises. In advance of the training date, students will be provided with vocabulary and other training material to review before the classroom training. Interactive instruction and handouts explaining the activated sludge process, exam taking skills and practice, math drills, general knowledge review, concept reinforcement, confidence building, homework, and a supportive learning environment are included. Registrants should bring a calculator, a notebook, and a pen/pencil.

**Tuesday, 8:00am-11:30am**

**An Education and Training Committee Workshop – Rm 108**

Wastewater Treatment Biological Processes
This course is PA DEP approved for 3.0 wastewater contact hours.
Course ID 9356
Instructors: Manuel de los Santos & Thea Davis, both Aqua-Aerobic Systems, Inc.

The purpose of this course is to define the treatment processes required for removal of the main influent constituents, highlighting the nutrients present in wastewater and how these are removed by emerging treatment technologies including variations of activated sludge systems, as well as granular sludge technology.

**Monday, 8:45am-11:30am**

**Water Quality Monitoring Course – Rm 106**

This course is PA DEP approved for 3.0 wastewater contact hours.
Course ID 9407
Instructor: Ann Smith, Xylem

The Back to Basics: Water Quality Monitoring course provides basic information for plant operators, laboratory technicians, and lab supervisors on the topics of basic lab terms, equipment and testing of simple and common parameters. This course is for new employees who need an introduction to laboratory testing, or anyone wanting to review their basic scope of knowledge. The course will discuss common definitions, basic equipment, best practices and troubleshooting, and several common lab tests. Students will demonstrate their knowledge by participating in hands on activities and group discussion.

**Wednesday, 8:00am-11:30am**

**A Safety Committee Workshop**

**Introduction Locator Program – Rm 105**

This course is PA DEP approved for 3.0 drinking water & wastewater contact hours.
Course ID 579
Instructor: Maria White, PA One Call System

The program objectives explain the definitions and terminology used in the PA Act 287 of 1974, as amended; a description of a correct notification; an explanation of marking underground lines with the American Public Works Association (APWA) color code standards; and an illustration of how to respond through the Karl Automated Response to Locates (KARL) system.

**Monday, 12:45pm – 4:45pm**

**Responsibilities of Clean Water Professionals – Rm 108**

This course is PA DEP-approved for 3.5 wastewater contact hours.
Course ID 7122
Instructors: Erick Ammon, Marc Neville, Kevin Buss, and Brandon Bettinger, all with PADEP Bureau of Clean Water

The course will include an introduction to the Wastewater Operator Code of Ethics. Upon completion of the course, students will be able to describe the importance of good communication and establish a communication system with owners, customers, and regulatory agencies. They will also be ready to accept and carry out the responsibilities and rewards of being a Clean Water Professional. Course content will include: Operator Best Practices; Protecting/Maintaining your System; Utilizing Resources Wisely; Rules and Regulations that Impact Wastewater Operators; Security and Emergency Planning for Wastewater Systems; and Educating Owners, Customers, and the Public.

**Wednesday, 8:00am-11:45am**

**A Biosolids Committee Workshop**

**Solids Handling & Disposal – Rm 105**

This course is PA DEP approved for 3.5 wastewater contact hours.
Course ID 9165
Instructors: Charles Winslow, GHD; Chris Boyd, Charter Machine; Howard Butler, GHD

The purpose of this course is to provide an overview of current trends in biosolids thickening, processing, dewatering, and disposal. The core topics will include thickening technologies, anaerobic digestion, aerobic digestion, and solids management planning. Dewatering strategies and technologies will also be discussed, as well as biosolids disposal and beneficial use opportunities.
D’Huy Engineering has joined CHA Consulting. One team committed to delivering lasting water and wastewater solutions across Pennsylvania and beyond.
Exhibit Hall Floor Plan

Exhibit Hall Hours

**MONDAY**
- 9:45AM-5:45PM
  - Morning Break
  - Lunch
  - Afternoon Break
  - President’s Reception

**TUESDAY**
- 7:30AM-5:45PM
  - 7:30-8:30am
  - 9:40-10:40am
  - 11:45am-1:00pm
  - 2:40-3:40pm
  - 4:45-5:45pm

Be sure to visit with the exhibitors!
Exhibit Hall Information

The Exhibit Hall is a very important part of the PennTec Conference. The exhibits will open on Monday at 9:45am and will close on Tuesday at 5:45pm. Visiting the vendors will be informational, educational, and it will also be fun!

Raffle Prizes
Prizes will be raffled at different times throughout the Conference. Attendees registered for the conference will be given raffle tickets, and there will be marked containers placed randomly throughout the Exhibit Hall – one for each prize. Attendees can put as many of their tickets as they’d like in each marked container. Raffle tickets will be drawn in the Exhibit Hall at various times during the Conference. You must be present to win. Exhibitor representatives are not eligible for these drawings.

Beer & Pretzels Reception
Tuesday, 4:45-5:45pm
FREE BEER, WINE and soft pretzels will be served! Come to the Hall to relax and visit with the vendors.

There is no charge for this event.

Exhibit Hall Food Functions
Lunch, morning and afternoon breaks, and the President’s Reception will be in the Exhibit Hall on Monday. Continental breakfast, morning & afternoon breaks, lunch, and the Beer & Pretzels Reception will be in the Exhibit Hall on Tuesday.

President’s Reception
Monday, 4:45-5:45pm
Be sure to attend the President’s Reception! Enjoy FREE BEER, WINE and snacks while you network with your colleagues and the vendors.

There is no charge for this event.

Exhibit Hall Bingo
The PWEA Exhibits & Sponsors Committee organized this event for Monday and Tuesday during the Conference.

How it Works:
Conference attendees will receive a Bingo card in their registration packets, along with a list of participating exhibitor names. Each participating exhibitor will be assigned a letter/number from the Bingo cards. Attendees will need to visit the exhibitors in order to have their cards stamped.

Once the squares are stamped horizontally, vertically or on the diagonal, the attendee will then turn in the card to a designated individual or booth just before the last break of each day (Monday or Tuesday) for confirmation. Attendees must be present to win and can only turn in one card, either on Monday or on Tuesday.

Prizes will be awarded to all Bingo winners during the last Exhibit Hall break on Monday and on Tuesday. Winners will also be entered into a Prize Drawing on Monday and on Tuesday.

Car Racing in the Exhibit Hall
The Exhibits & Sponsors Committee is hosting the 2nd Annual Car Racing event!

Hot Wheels cars will be raced down a track within exhibit booths during breaks. Races will be in heats of 6-8 numbered cars. Winner of each heat advances to the final. Each heat winner and the overall winner will receive a gift card.
Exhibitor Listings

A

AC Schultes, Inc.
Eric Fox
664 S Evergreen Ave.
Woodbury, PA  08097
856-845-5656
eric_fox1@comcast.net
Booth 108

ADS Environmental
Cheryl Paulin
35 Rosecroft Run
Hanover, PA  17331-8643
717-634-0094
cpaulin@idexcorp.com
Booth 18

Advanced Rehabilitation Technology
Rusty Hesselschwardt
525 Winzeler Dr., Unit 1
Bryan, OH  43506
419-636-2684
rusty@artcoatingtech.com
Booth 14

Amwell
Mike Dvoracek
161 S. Lincolnway, Ste 310
North Aurora, IL  60542
630-898-6900
mdvoracek@amwell-inc.com
Booth 5

Anser Advisory
Bryan Martucci
322 N. Shore Dr., Ste 240
Pittsburgh, PA  15212-5875
412-770-3162
bryan.martucci@anseradvisory.com
Booth 17

Aqua Aerobic Systems
P.O. Box 2026
Rockford, IL 61130
815-654-2501
solutions@aqua-aerobic.com
Booth 39

Arro Consulting
Chelsea Romejko
508 Thorngate Pl.
Millersville, PA  17551
717-205-4550
chelsea.romejko@arroconsulting.com
Booth 60

B

BGC Water & Wastewater Services Division
Jennifer Haines
P.O. Box 55
Skippack, PA  19474-0055
610-222-3508
jbealer@hkgroup.com
Booth 76

Bissnuss, Inc.
Lori Miller
2600 Boyce Plaza Rd.
Pittsburgh, PA  15241-3949
412-221-1200
lmiller@bissnussinc.com
Booth 51

Buchart Horn, Inc.
Emily Campagna
445 W. Philadelphia St.
York, PA  17401
717-852-1400
ecampagna@bucharthorn.com
Booth 86

C

Charter Machine Company
Christopher Boyd
720 W. Prospect Ave.
North Wales, PA  19454-2644
732-425-7489
chrisb@chartermachine.com
Booth 97

Chesapeake Environmental Equipment
Jason North
199 Overlook Rd.
Morgantown, PA  19543
610-451-1178
jnorth@cheseequip.com
Booth 37

Colliers Engineering & Design
Ronald Madison
941 Marcon Blvd, Ste 801
Allentown, PA  18109
610-868-4201
eventsteam@collierseng.com
Booth 63

Coyne Chemical/Environmental Services
Tim McComas
3015 State Rd.
Croydon, PA  19021
215-785-3000
dmaugle@coynechemical.com
Booth 85

CW Sales Corporation
Jenna Byrnes
199 S. Forrest Ave.
West Norriton, PA  19403-6015
610-277-6444
jbyrnes@cwsalescorp.com
Booth 71

D

Daman Superior, LLC
Greg Corrins
754 Kittanning Hollow Rd.
East Brady, PA  16028-3014
724-664-6089
gcorrins@damansuperior.com
Booth 74

Denali Water Solutions, LLC
Glen Knecht
250 Lucius Gordon Dr., Ste 8
West Henrietta, NY  14586-9662
518-222-5452
glen.knecht@denaliwater.com
Booth 55

DN Tanks
Tina Ganey
39 E. Main St., Fl 1
Mechanicsburg, PA  17055-3845
717-356-0491
tina.ganey@dntanks.com
Booth 82

DRV, Inc.
Scott Hinsch
6 Commerce Dr.
Pittsburgh, PA  15239
412-247-4816
dshinsch@drv-inc.com
Booth 47

Duke’s Root Control, Inc.
Jami Tempera
400 Airport Rd., Ste E
Elgin, IL  60123
800-447-6687
jtempera@dukes.com
Booth 16
Exhibitor Listings

E
Entech Engineering, Inc.
Lori Ferrizzi
201 Penn St.
Reading, PA 19601
610-373-6667
lferrizzi@entecheng.com
Booth 36

Envirep, Inc./Gorman-Rupp
Ginny Summers
3705 Trindle Rd., Ste 110
Camp Hill, PA 17011-4334
717-979-8444
gsummers@envirep.com
Booth 39, 40, 41, 42

Environmental Service Labs
Julie Silvis
1803 Philadelphia St.
Indiana, PA 15701
724-463-8378
jsilvis@envilabs.com
Booth 68

Environmental Service Labs, Inc.
Elizabeth Gregg
100 Timbersprings Dr.
Indiana, PA 15701
724-463-8378 ext.102
emaniegregg@hotmail.com
Booth 78

F
FieldForce
Kaitlyn Brach
34 Northeast Dr.
Hershey, PA 17033
717-508-0550
sales@fieldforcerentals.com
Booth 90

Flow Assessment Services, LLC
Lucas Chapman
72 Priscilla Ln.
Auburn, NH 03032
603-656-9799
lchapman@flowassessment.com
Booth 13

Franklin Miller, Inc.
Tom Zangoglia
60 Okner Parkwy
Livingston, NJ 7039
973-487-9412
tomz@franklinmiller.com
Booth 6

Freya Systems
Cindi Sutera
1400 Providence Rd., Ste 309
Media, PA 19063
484-445-2947
cindis@amscommunications.net
Booth 81

G
G.R. Sponaugle
Debra Massott
4391 Chambers Hill Rd., P.O. Box 4456
Harrisburg, PA 17111
717-703-3234
debra.massott@grsponaugle.com
Booth 59
Exhibitor Listings

Gannett Fleming, Inc.
Robert Dengler
207 Senate Ave.
Camp Hill, PA 17011
717-886-5392
rdengler@gfnet.com
Booth 66

Gayle Corporation
Wyllys Cass
P.O. Box 542
Berwyn, PA 19312-0542
215-920-5751
wcass@gaylecorp.com
Booth 94

Geiger Pump and Equipment Company
Alan Greve
830 Tryens Rd.
Aston, PA 19014
610-459-1212
agreve@geigerinc.com
Booth 30, 31

George Kelso Company, LLC
Jennifer Renninger
P.O. Box 743
East Berlin, PA 17316-0743
717-932-9980
jrenninger@kelsocompany.com
Booth 62

GHD, Inc.
Cindy Heisler
225 Grandview Ave., Ste 403
Camp Hill, PA 17011-1729
717-585-6410
cindy.heisler@ghd.com
Booth 53

Gilson Engineering Sales
John Warren
535 Rochester Rd.
Pittsburgh, PA 15237-1747
412-348-3007
jww@gilsoneng.com
Booth 54

GMH Associates of America, Inc.
Anthony Genniro
5 Chelten Wy, Bldg 15
Trenton, NJ 08638
609-396-4751
sray@gmhassociates.com
Booth 72

Golden Equipment Co., Inc.
Ross Stafford
P.O. Box 873
Mars, PA 16046
800-242-1494
golden4pa@hotmail.com
Booth 88

Gwin Dobson & Foreman, Inc.
Angie Kordish
3121 Fairway Dr.
Altoona, PA 16602-4496
814-943-5214
akordish@gdfengineers.com
Booth 99

Hach Company
Lyle Gross
P.O. Box 389
Loveland, CO 80539
800-227-4224
lyle.gross@hach.com
Booth 12

Hawkins, Inc.
Dylan Becker
1161 Commercial Ave., SE
New Philadelphia, OH 44663
234-801-4004
melissa.kopka@hawkinsinc.com
Booth 91

Hayward Flow Control
Olga Elezovic
1 Hayward Industrial Dr.
Clemmons, NC 27012
336-592-5120
Oelezovic@hayward.com
Booth 64

Herbert Rowland & Grubic, Inc.
Anna Clarke
369 E. Park Dr.
Harrisburg, PA 17111-2730
570-452-6429
aclarke@hrg-inc.com
Booth 57

Hill Services
Marilyn Baron
1746 W. Bajada Rd.
Surprise, AZ 85387-1000
610-704-1804
mbaron@hillishere.com
Booth 38

IDEXX Laboratories, Inc.
Jamie Brunelle
One IDEXX Dr.
Westbrook, ME 04092
800-321-0207
jamie-brunelle@idexx.com
Booth 46

Infiltrator Water Technologies
Jessica Stiner
654 4th St.
Oakmont, PA 15139-1528
860-577-7000
JStiner@infiltratorwater.com
Booth 56

InfoSense
Heather McNeil
8116 S. Tyon St., Ste B3-203
Charlotte, NC 28273
877-747-3245
hmceil@infosense.com
Booth 49

Iron Horse Environmental
Kevin Pence
P.O. Box 282
Fairview Village, PA 19409
610-222-2525
kpence@ihelc.com
Booth 52

J

JHA Companies
Travis Long
466 S. Main St.
Montrose, PA 18801
844-542-4757
trlong@jhacompanies.com
Booth 58

Joos Equipment Company
Eric Joos
P.O. 368
Paoli, PA 19301-0368
610-644-5875
ejos@joosequipment.com
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Regional Sales Manager
+1-724-312-3336
robert.biase@xylem.com

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Kappe Associates, Inc.
Amber Crossley
335 Main St.
Emmaus, PA  18049
215-361-5700
amber@kappe-inc.com
Booth 33, 34, 35

Keystone Engineering Group, Inc.
Jenney Walton
590 Lancaster Ave., Ste 200
Frazer, PA  19355-3606
610-407-4100
jwalton@kegi.net
Booth 63

KLH Engineers, Inc.
Joseph Gianvito
5173 Campbells Run Rd.
Pittsburgh, PA  15205-9733
412-494-0510
jgianvito@klhengineers.com
Booth 84

Larson Design Group
1000 Commerce Park Dr., Ste 201
Williamsport, PA  17701
570-323-6603
qschappell@larsondesigngroup.com
Booth 73

LB Water
Ben Reichley
593 S. High St.
Selinsgrove, PA  17870-0060
570-374-2355
ben.reichley@lbh2o.com
Booth 101

LRM, Inc.
Mark Crawford
P.O. Box 244
Hilltown, PA  18927
215-721-4840
mcrawford.lrm@comcast.net
Booth 79

M.
M.E. Simpson Co., Inc.
Mackenzie App
4320 Coventry Green Cir.
Williamsville, NY  14221-7239
315-857-8845
mackenzie@mesimpson.com
Booth 92

Mercer Rubber
David Bloom
350 Rabro Dr.
Hauppauge, NY  11788
631-348-0282
dbloom@mason-ind.com
Booth 77

Mid Atlantic Pump & Equip Co.
Dennis Zepp
228 N. Rte 73
Berlin, NJ  08009
856-768-3880
dzepp@mapeco.com
Booth 67

Mid Atlantic Storage Systems, Inc.
Brian Hyde
2471 N. Whittmore St.
Furlong, PA  18925
740-895-6027
brian@midatlanticstorage.com
Booth 50

Miller Energy, Inc.
Chip Miller
3200 S. Clinton Ave.
South Plainfield, NJ  07080
908-755-6700
cmiller@millerenergy.com
Booth 100

Mott Macdonald, LLC
Kelly Graber
111 Wood Ave. S.
Iselin, NJ  08830
979-379-3400
kelly.graber@mottmac.com
Booth 32

Mr. Rehab, LLC
Jennifer Crum
3 Long Ln
Mechanicsburg, PA  17050
717-697-1242
jcrum@mrrehab.com
Booth 103

Municipal Maintenance Company, Inc.
Daniel Hennessy
1352 Taylors Ln
Cinnaminson, NJ  08077
856-786-9434
dhennessey@mmc-nj.com
Booth 28, 29

Neo Water Treatment
Bill Pettit
6148 Baker School Rd.
Trafford, PA  15085-2326
724-309-9720
b.pettit@neomaterials.com
Booth 89

Nexom/EDI/Napier-Reid
Michael Cole
5601 Paris Rd.
Columbia, MO  65202
1-954-540-0672
michael.cole@nexom.com
Booth 2

Nichols Environmental, LLC
Edward Nichols
13422 Walnut Tr.
Chardon, OH  44024
412-420-9144
ed.nichols@nicholsenv.com
Booth 22, 23, 24

North East Technical Sales
John Dezzi
171 Ruth Rd.
Harleyville, PA  19438
215-513-1000
jdezzi@netechsales.com
Booth 45

PA One Call System, Inc.
Maria White
925 Irwin Run Rd.
West Mifflin, PA  15122-1078
717-730-0127
mawhite@pa1call.org
Booth 70

Pace Analytical Services, LLC
Erika Bechdel
1638 Roseytown Rd., Ste 2,3, & 4
Greensburg, PA  15601
724-850-5600
erika.bechdel@pacelabs.com
Booth 65

Pleasant Mount Welding, Inc.
Michael Burke
45 Dundaff St.
Carbondale, PA  18407
570-282-6164 ext. 137
mburke@pmwi.net
Booth 44

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Robert Biase
Regional Sales Manager
+1-724-312-3336
robert.biase@xylem.com
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<th>Exhibitor Listings</th>
</tr>
</thead>
</table>
| **Pro-Tech Systems Group**  
Andrew Dolan  
123 E. Waterloo Rd.  
Akron, OH 44319  
330-773-9828  
andrew@pteinc.com  
**Booth 93** |
| **Psie Process – Pumping Services, Inc.**  
Christopher Evans  
724 S 11th St.  
Philadelphia, PA 19147-1904  
215-668-1746  
chris.evans@psiprocess.com  
**Booth 15** |
| **Pumpman Pittsburgh**  
Leanora Heffley  
3812 William Flynn Hwy, Bldg. #2  
Allison Park, PA 15101  
412-487-7140  
lheffley@pumpmanpittsburgh.com  
**Booth 9, 10** |
| **Purafil Filtration Group**  
2654 Weaver Wy  
Doravile, GA 30340  
770-662-8545  
www.purafilo.com  
**Booth 39** |
| **PW Tech**  
9004 Yellow Brick Rd., Ste D  
Rosedale, MD 21237  
410-238-7977  
contact@pwtech.us  
**Booth 42** |
| **Pyrz Water Supply Co., Inc.**  
Robert Pyrz  
P.O. Box 107  
Harleysville, PA 19438  
215-256-8430  
bob@pyrzwater.com  
**Booth 25, 26, 27** |
| **RedZone Robotics, Inc.**  
Sam Cancilla  
195 Thorn Hill Rd., Ste 110  
Warrendale, PA 15086  
412-476-8980  
ext. 231  
sancilla@redzone.com  
**Booth 7** |
| **Remington & Vernick Engineers**  
Samantha Scavuzzo  
555 Croton Rd., Ste 401  
King of Prussia, PA 19406  
856-795-9595  
samantha.scavuzzo@rvre.com  
**Booth 83** |
| **Repair Technology**  
Chris Mahoney  
575 Rte 73 N., Unit C-5  
West Berlin, NJ 08091  
856-336-2684  
cmahoney@belzonareptech.com  
**Booth 95** |
| **Riordan Materials Corporation**  
Arthur Auchenbach  
6198 Butler Pike, Ste 150  
Blue Bell, PA 19422-2600  
267-784-5566  
aauchenbach@riordanmat.com  
**Booth 4** |
| **Sherwin-Williams Protective & Marine**  
Toby Butler  
139 Dover Dr.  
Moon Township, PA 15108-1079  
717-753-0653  
toby.butler@sherwin.com  
**Booth 102** |
| **Sherwood Logan & Associates**  
Elyse Sims  
370 Middletown Blvd., Ste 500  
Langhorne, PA 19047-1840  
610-207-3200  
esims@sherwoodlogan.com  
**Booth 19, 20, 21** |
| **Spotts, Stevens and McCoy**  
Jamie Lorah  
1047 North Park Rd.  
Reading, PA 19610  
610-621-2000  
eileen.kaley@ssmgroup.com  
**Booth 69** |
| **The Gorman-Rupp Company**  
600 South Airport Dr.  
Mansfield, OH 44901  
419-755-1011  
www grpumps com  
**Booth 40** |
| **The RootX Company**  
Drew Raffensperger  
1705 Salem Industrial Dr. NE  
Salem, OR 97301  
503-364-2999  
drew@rootx.com  
**Booth 11** |
| **Tnemec Coatings**  
Wally Bates  
10 N. Main St.  
Phoenixville, PA 19468  
610-551-3713  
waltbates@tnemec.com  
**Booth 75** |
| **Usabluebook**  
Earlene Langston  
P.O. Box 9005  
Gurnee, IL 60031  
847-377-5162  
elangston@usabluebook.com  
**Booth 48** |
| **Utility Services Group**  
Anne Shambaugh  
1304 Slate Hill Rd.  
Camp Hill, PA 17011  
717-737-6092  
ashambaugh@usginc.net  
**Booth 87** |
| **VEGA Americas**  
Chantal Groom  
3877 Mason Research Pkwy  
Lebanon, OH 45036  
513-272-0153  
c.groom@vega.com  
**Booth 80** |
| **Veolia Water Technologies**  
4001 Weston Pkwy  
Cary, NC 27513  
919-677-8310  
usmunicipal@veolia.com  
**Booth 42** |
| **Vogelsang (Envirep)**  
P.O. Box 751  
Ravenna, OH 44266  
330-296-3820  
sales@vogelsangusa.com  
**Booth 41** |
Vtscada By Trihedral
Mike Stark
2862 Southfield Dr.
Beavercreek, OH  45434
937-470-2503
mike.stark@trihedral.com
Booth 94

Whice Services Ltd.
William Ingram
10965 SW 83rd Ave.
Ocala, FL  34481-9784
630-746-2614
whic597@aol.com
Booth 96

Xylem Water Solutions
A.J. Wilson
2330 Yellow Springs Rd.
Malvern, PA  19355
610-408-6515
aj.wilson@xyleminc.com
Booth 3

Water Works Metrology, LLC
Tim Young
1425 Rock Quarry Rd.
Raleigh, NC  27610
919-301-8466
tsanderson@waterworksmetrology.com
Booth 43

Xylem Dewatering Solutions
Beth Grannis
145 Philo Rd. W.
Elmira, NY  14903
607-215-0668
elizabeth.grannis@xylem.com
Booth 8

Xylem/ Evoqua Water Technologies
Robert Baise
210 Sixth Ave., Ste 3300
Pittsburgh, PA 15222
724-312-3336
robert.biase@xylem.com
Booth 1

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<table>
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<tr>
<th>Compound</th>
<th>Leachate (ng/l)</th>
<th>RO 1 Permeate</th>
<th>RO 2 Permeate</th>
<th>Rejection</th>
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<tbody>
<tr>
<td>Perfluorobutanesulfonic acid (PFBS)</td>
<td>280</td>
<td>&lt;2</td>
<td>&lt;1.5</td>
<td>&gt;99.3%</td>
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<tr>
<td>Perfluorobutanoic acid (PFBA)</td>
<td>1100</td>
<td>5</td>
<td>&lt;1.5</td>
<td>&gt;99.8%</td>
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<tr>
<td>Perfluorooctanoic acid (PFOA)</td>
<td>480</td>
<td>&lt;2</td>
<td>&lt;1.5</td>
<td>&gt;99.6%</td>
</tr>
<tr>
<td>Perfluorooctanesulfonic acid (PFOS)</td>
<td>699</td>
<td>&lt;2</td>
<td>&lt;1.5</td>
<td>&gt;99.7%</td>
</tr>
<tr>
<td>Perfluorooctanoic acid (PFOS)</td>
<td>2100</td>
<td>7.8</td>
<td>&lt;1.5</td>
<td>&gt;99.9%</td>
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<tr>
<td>Perfluorooctanesulfonic acid (PFOS)</td>
<td>200</td>
<td>&lt;2</td>
<td>&lt;1.5</td>
<td>&gt;99.1%</td>
</tr>
<tr>
<td>Perfluorooctanoic acid (PFOA)</td>
<td>820</td>
<td>2.5</td>
<td>&lt;1.5</td>
<td>&gt;99.8%</td>
</tr>
<tr>
<td>Perfluorooctanoic acid (PFOA)</td>
<td>850</td>
<td>2.7</td>
<td>&lt;1.8</td>
<td>&gt;99.8%</td>
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<tr>
<td>Total</td>
<td>6560</td>
<td>18</td>
<td>0</td>
<td>&gt;99.9%</td>
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**UVt RESULTS**

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<th>Source</th>
<th>UVt</th>
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<tr>
<td>City Water</td>
<td>93%</td>
</tr>
<tr>
<td>POTW Effluent (No Leachate)</td>
<td>63.76%</td>
</tr>
<tr>
<td>POTW Effluent (With Leachate)</td>
<td>17.6%</td>
</tr>
<tr>
<td>Nanofiltration Permeate</td>
<td>2%</td>
</tr>
<tr>
<td>POTW Effluent w/10% Nanofiltration Permeate</td>
<td>46%</td>
</tr>
<tr>
<td>Leachate Reverse Osmosis Permeate</td>
<td>84%</td>
</tr>
<tr>
<td>POTW Effluent w/10% RO Permeate</td>
<td>78.5%</td>
</tr>
<tr>
<td>POTW Effluent w/25% RO Permeate</td>
<td>80.5%</td>
</tr>
<tr>
<td>POTW Effluent w/40% RO Permeate</td>
<td>81.1%</td>
</tr>
</tbody>
</table>

**MERCURY REMOVAL**

<table>
<thead>
<tr>
<th>Month</th>
<th>(ng/l)</th>
<th>&lt;0.5</th>
<th>Rejection</th>
</tr>
</thead>
<tbody>
<tr>
<td>October</td>
<td>110</td>
<td>&lt;0.5</td>
<td>99.74%</td>
</tr>
<tr>
<td>November</td>
<td></td>
<td>&lt;0.5</td>
<td>99.74%</td>
</tr>
<tr>
<td>December</td>
<td></td>
<td>&lt;0.5</td>
<td>99.74%</td>
</tr>
<tr>
<td>January</td>
<td></td>
<td>&lt;0.5</td>
<td>99.74%</td>
</tr>
<tr>
<td>February</td>
<td></td>
<td>&lt;0.5</td>
<td>99.74%</td>
</tr>
</tbody>
</table>

Bernie Rieder | 574-360-4535
bernie@rochemamericas.com
# Raffle Draw Schedule

<table>
<thead>
<tr>
<th>Time</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td><strong>MONDAY LUNCH</strong>&lt;br&gt;12:30PM</td>
<td>$250 Amazon gift card</td>
</tr>
<tr>
<td><strong>MONDAY AFTERNOON BREAK</strong>&lt;br&gt;3:30PM</td>
<td>Bartesian cocktail maker machine and two spirit bottles</td>
</tr>
<tr>
<td><strong>MONDAY PRESIDENT’S RECEPTION</strong>&lt;br&gt;5:30PM</td>
<td>Ladies Designer Handbag &amp; Wine Fridge (dual-zone, 18-bottle capacity)</td>
</tr>
<tr>
<td><strong>TUESDAY MORNING BREAK</strong>&lt;br&gt;10:15AM</td>
<td>Cappuccino/Espresso/Coffee machine</td>
</tr>
<tr>
<td><strong>TUESDAY LUNCH</strong>&lt;br&gt;12:30AM</td>
<td>$250 Amazon gift card</td>
</tr>
<tr>
<td><strong>TUESDAY AFTERNOON BREAK</strong>&lt;br&gt;3:30PM</td>
<td>Yeti Hopper cooler</td>
</tr>
<tr>
<td><strong>TUESDAY BEER &amp; PRETZEL BREAK</strong>&lt;br&gt;5:15PM</td>
<td>Kegerator Single-Tap Beer Dispenser</td>
</tr>
</tbody>
</table>

*You must be present to win!*<br>*Guests & Exhibitors are not eligible for the raffle drawings.*
The Research Program showcases the ongoing research activities of students (graduate and undergraduate) in the fields of wastewater, water quality, and environmental management relevant to Pennsylvania. The PWEA Research Committee reviews student research abstract submissions from across the region and selects the top abstracts for oral presentation and to receive the Student Research Award. In addition, qualifying abstracts are invited to participate in a Poster Contest at the Conference. After judging by faculty and practicing engineers, the top poster presenters in both undergraduate and graduate categories will be selected. All posters will be available for viewing by Conference attendees. Awards will be presented during the Research Program.

<table>
<thead>
<tr>
<th>Author's Name</th>
<th>Undergrad/Grad</th>
<th>Sponsoring University/College</th>
<th>Advisor</th>
<th>Title</th>
<th>Awards</th>
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</thead>
<tbody>
<tr>
<td>Patrick Hoover</td>
<td>Grad</td>
<td>Penn State University</td>
<td>Jay Regan</td>
<td>Isolation of Phylogenetically and Phenotypically DiversePolyphosphate-Accumulating Organisms (PAOs) from Natural and Engineered Environments</td>
<td>presentation</td>
</tr>
<tr>
<td>Jennifer Rao</td>
<td>Grad</td>
<td>Lehigh University</td>
<td>Kristen Jellison</td>
<td>Identification of Unknown Amoeba Found in Two Water Treatment Networks</td>
<td>presentation</td>
</tr>
<tr>
<td>Jordan Brown</td>
<td>Grad</td>
<td>Penn State University</td>
<td>Rachel Brennan</td>
<td>The Effects of Duckweed Biochemical Composition and Mechanical Properties on Densification and Pellet Quality</td>
<td>presentation</td>
</tr>
<tr>
<td>Benjamin Castillo-Bermudez</td>
<td>Grad</td>
<td>Penn State University</td>
<td>Jay Regan</td>
<td>Long-Term Irrigation with Treated Wastewater Influences Phosphorus Dynamics and Speciation and Related Enzyme Activities in Agroforestry Soils of a Humid Region</td>
<td>presentation</td>
</tr>
<tr>
<td>Pieter Heyn</td>
<td>Grad</td>
<td>Lehigh University</td>
<td>John Fox and Derrick Brown</td>
<td>Enhanced Sorption of Ionizable Organic Chemicals Using the Charge Regulation Effect</td>
<td>presentation</td>
</tr>
<tr>
<td>Kari Lagan</td>
<td>Grad</td>
<td>Penn State University</td>
<td>Rachel Brennan</td>
<td>Improving the Sustainability of Duckweed Systems for Nutrient Recovery from Dairy Manure: Enhancing Growth, Reducing Water Requirements, and Mitigating Ammonia Volatilization through Acidification</td>
<td>poster</td>
</tr>
<tr>
<td>Joshua Raeter</td>
<td>Undergrad</td>
<td>Bucknell University</td>
<td>Matthew Higgins</td>
<td>Effects of the Organic Fraction of Municipal Solid Waste on Anaerobic Co-digestion</td>
<td>poster</td>
</tr>
</tbody>
</table>
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Meredith Welle

Committee Meeting Schedule

Monday, June 17, 2024
• PWEA Board of Directors
• Lab Practices Committee
• Young Professionals Committee
• Biosolids Committee

Tuesday, June 18, 2024
• Training Committee

Location: The Gardens Restaurant
Time: 7 a.m
PWEA Contacts for Event Management and Executive Director

Please contact Rachele Sohn via email should you need assistance with Event Management.

**Rachele Sohn**  
rachelesohn@pwea.org

For all other Association services, please contact Melanie Greene or Breyana Fulton.

**Melanie Greene**  
Executive Director  
melaniegreene@pwea.org

**Breyana Fulton**  
Deputy Executive Director  
breyanafulton@pwea.org
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What serving on a committee isn’t...
- Always being in the spotlight
- Having to go it alone
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Technical and case study presentations are the lifeblood of PennTec. If you have some experience in the fields of Biosolids, Collection Systems, Engineering, Construction, Government/Regulatory Affairs, Industrial Waste Treatment, Laboratory Practices, Operations, Safety, Stormwater, or Utility Management, the Pennsylvania Water Environment Association (PWEA) invites you to submit your topic for PennTec 2024.

Experience or case studies from some of the smallest municipalities often become the most popular, so please do not think that your project is too small to interest your fellow professionals.

Abstracts of 300 words or less, should describe the subject matter with enough detail to allow evaluation of the proposed topic. Session presentations will be in 30-minute blocks including time for questions.

Abstract submittals will only be accepted electronically in WORD format. Submission details and the abstract submittal form will be posted on the PWEA website in August. You will be asked to identify which of the Technical Programs would best fit your topic. Submissions should be emailed to: abstracts@pwea.org.

No travel or assistance funds are available for speakers. Speakers are responsible for all of their own transportation and lodging expenses. Discounted speaker registration fees will be offered for the day of the presentation or for the full conference.

Questions should be directed to abstracts@pwea.org.

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