



# Pennsylvania Water Environment Association

Annual Technical  
Conference & Exhibition

PennTec 2023

## REGISTRATION PROGRAM

June 18-21, 2023

Hershey Lodge & Convention Center  
Hershey, PA

**PennTec**   
**2023** 94<sup>th</sup> Annual Technical  
Conference & Exhibition

# Conference at a Glance



(as of January 31, 2023)

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

## Sunday, June 18

11:00am-3:00pm	Community Service Project
12:00-4:00pm	Golf Tournament – Deer Valley Golf Course
3:00-5:00pm	Registration Open
6:00-7:30pm	Vendor Get-Together with Exhibits & Sponsors Committee

## Monday, June 19

7:00am-5:00pm	Registration Open
7:00-8:00am	Continental Breakfast in Hallway
7:30-8:30am	Keynote Presentation
8:40am-12:00pm	<b>Morning Technical Programs</b> <i>Biosolids</i> <i>Collection Systems</i> <i>Engineering &amp; Construction</i> <i>Stormwater</i> <i>Utility Management &amp; Government Affairs</i>
	<b>Workshops</b> <i>Activated Sludge Refresher – Day 1 of 2</i> <i>Laboratory Supervisor Training</i> <i>Responsibilities of Clean Water Professionals</i>
8:00am-5:00pm	
8:45am-4:00pm	
12:45-4:45pm	
9:45-10:15am	Exhibit Hall Open with Break Refreshments
12:00-1:00pm	Exhibit Hall Open with Complimentary Lunch
12:30-1:00pm	PWEA Annual Business Meeting with Dessert & Coffee
12:55-1:00pm	5-Minute Vendor Presentations
1:00-3:30pm	Professional Operators (PO) & Students & Young Professionals (SYP) Plant Tour
1:00-4:45pm	<b>Afternoon Technical Programs</b> <i>Biosolids</i> <i>Collection Systems</i> <i>Engineering &amp; Construction</i> <i>Stormwater</i> <i>Utility Management &amp; Government Affairs</i>
2:40-3:40pm	Exhibit Hall Open with Break Refreshments
3:40-4:45pm	Collection Systems Mobile Sessions in Exhibit Hall
4:45-5:45pm	President's Reception in Exhibit Hall
5:45-7:00pm	Annual PWEA Awards Ceremony Reception
7:15-9:30pm	Tailgate Dinner and Cornhole Tournament

**NOTE: The Golf Tournament has been moved to Wednesday, with an 8:30am shotgun start.**

## Tuesday, June 20

7:00am-5:00pm	Registration Open
7:30-8:30am	Exhibit Hall Open with Continental Breakfast
7:55-8:00am	5-Minute Vendor Presentations
8:00-11:45am	<b>Morning Technical Programs</b> <i>Collection Systems</i> <i>Engineering &amp; Construction</i> <i>Industrial Waste Pretreatment</i> <i>Privatization</i> <i>Professional Operators</i> <i>Utility Management &amp; Government Affairs</i>
	<b>Workshops</b> <i>Common Pump Station Electrical Issues</i> <i>Nutrient Workshop</i> <i>Activated Sludge Refresher – Day 2 of 2</i>
8:00-11:45am	
8:00am-4:45pm	
8:00am-5:00pm	
9:00-11:30am	Stormwater Tour
9:40-10:40am	Exhibit Hall Open with Break Refreshments
9:40-10:40am	Operations Challenge in Exhibit Hall
11:15-11:45am	Biosolids Mobile Sessions in Exhibit Hall
11:45am-1:00pm	Exhibit Hall Break with Complimentary Lunch
11:45am-1:00pm	Student Research Poster Presentations
11:45am-1:00pm	Women in Water Luncheon
12:55-1:00pm	5-Minute Vendor Presentations
1:00-4:45pm	<b>Afternoon Technical Programs</b> <i>Collection Systems</i> <i>Engineering &amp; Construction</i> <i>Industrial Waste Pretreatment</i> <i>Privatization</i> <i>Professional Operators</i> <i>Student Research Presentations</i>
2:40-3:40pm	Exhibit Hall Open with Break Refreshments
4:45-5:45pm	Beer & Pretzels Reception in Exhibit Hall
4:45-5:45pm	Operator Olympics in Exhibit Hall

## Wednesday, June 21

7:00-8:30am	Continental Breakfast in Hallway
7:00am-12:00pm	Registration Open
7:55-8:00am	5-Minute Vendor Presentations
8:00-11:15am	<b>Morning Technical Programs</b> <i>Engineering &amp; Construction</i> <i>PFAS</i>
	<b>Workshops</b> <i>Introduction Locator Program</i> <i>Solids Handling &amp; Disposal</i>
8:00-11:30am	
8:00-11:45am	
9:00am-1:00pm	PA DEP Water/Wastewater Operator Certification Exam
9:40-10:10am	Break Refreshments in Hallway
11:30am	Conference Concludes



# A Message from the PWEA Leadership



**Linda Leopold**  
Chair, PennTec 2023  
Conference Committee

On behalf of the PWEA Board of Directors and the 2023 Conference Committee, we invite you to attend PWEA's 94th Annual Technical Conference and Exhibition (PennTec 2023) on June 18-21 at the Hershey Lodge & Convention Center in Hershey, 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!



**Kara Humes**  
PWEA President

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 Sunday this year.



**Jeff Cantwell**  
Chair, PennTec 2023  
Program Committee

On Monday, the Professional Operators Committee and the SYP 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 **Stormwater Tour**; the **Women in Water Luncheon**; the **Operations Challenge** event; 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!

## Keynote Presentation

**Monday, 7:30-8:30am**



### "Engineering Like an Actor"

Tom Kunetz weaves the story of how he came to combine the disparate fields of environmental engineering and theater which lead him to excel in both fields, becoming a high-ranking engineer at one of the largest wastewater utilities in the U.S., and a distinguished comic actor, director, playwright, and teacher at the famed Second City Theater in Chicago. With a presentation that is highly engaging, Tom will demonstrate using audience participation how he teaches professionals to improve their communication skills and unlock their creativity using concepts from the theater world. The presentation will be energetic, funny, and inspiring, a perfect way to springboard participants into the PennTec experience.

Tom Kunetz is Past President of the Water Environment Federation, a WEF Fellow, a member of the Board of Directors of the Water Research Foundation, and Assistant Director of Engineering at the Metropolitan Water Reclamation District of Greater Chicago, retired. Tom is also an accomplished actor, comedian, playwright, and director, and served on the faculty of the Second City Training Center comedy school in Chicago for 20 years. He is the recipient of numerous awards and recognitions, including the Charles Walter Nichols Award for Environmental Excellence from the American Public Works Association, and the Ralph Fuhrman Medal from the Water Environment Federation. Tom is a native of Hershey, Pennsylvania, a graduate of Penn State and Villanova Universities, and a former member of the Water Pollution Control Association of Pennsylvania. Now with Mosley I Kunetz Workshops, he travels the country presenting workshops to professionals teaching leadership skills, high-value communication, and creating a culture of innovation.

## Table of Contents

<b>Annual Business Meeting.....</b>	<b>7</b>	<b>PWEA Information .....</b>	<b>22</b>
<b>Certification.....</b>	<b>19</b>	<b>Special Events.....</b>	<b>6-9</b>
<b>Conference at a Glance .....</b>	<b>2</b>	<b>Technical Program Details.....</b>	<b>10-19</b>
<b>Conference Registration Form .....</b>	<b>23</b>	<b>What's Included with Your Registration .....</b>	<b>4</b>
<b>Exhibit Hall Information .....</b>	<b>5</b>	<b>Workshop Details.....</b>	<b>20</b>
<b>General Information.....</b>	<b>4</b>	<b>Workshop Registration Form .....</b>	<b>21</b>
<b>Hotel Accommodations.....</b>	<b>9</b>		

# General Information

## Conference Registration

Registration is available for the Full Conference or at the Daily Rate. **See the chart below for a list of what is included with your registration fee.** Access to the Exhibit Hall is included for the day(s) covered by your registration. You must be a member of PWEA or WEF/PWEA to qualify for Member rates. Go to page 23 for the registration form or you can register online.

## Registration Confirmation

Confirmations will only be sent by email. Please be sure to include your email address on your registration form. Check your junk and spam folders if you don't receive your confirmation.

## Online Registration

To register online, go to [www.pwea.org](http://www.pwea.org), click on Event Registration under the Calendar tab, scroll down to the PennTec event description, then click the Register link to go to our secure registration page. Online registration is available with credit card payment, or you can register online and then mail a check within 10 business days. Credit card transactions will include a 3.5% "technology fee."

## Mobile Numbers

Mobile numbers are requested during registration, in case it is necessary to reach you during the Conference.

## Young Professionals

A Young Professional (YP) is age 35 years or younger. A special registration category is available for YPs who wish to attend the Conference on Monday or Tuesday. The discounted YP fee includes access to the Exhibit Hall and regular educational Conference sessions, plus continental breakfast, breaks and lunch. This registration also includes an optional discounted ticket for the PO/SYP Plant Tour on Monday or an optional discounted ticket for the Stormwater Tour on Tuesday. Driver's license ID is required when checking in on-site.

## Spouse/Life Partner Registration

With each FULL Conference registration, a spouse/life partner may be registered at no charge. Daily and discounted registrations do not qualify for this registration category. Training sessions, workshops, and ticketed events are not included. Ticket(s) must be purchased if a spouse/life partner wishes to attend those events.

## College Students

Full-time college students may register at no charge if the registration form is submitted with a photocopy of current student identification. Ticketed events and workshops are not included.

## Cancellation/Substitution Policy

No refunds granted after May 12th. A \$50 cancellation fee will be assessed on all refund requests received by May 12th. All refunds must be requested in writing. Substitutions are permitted with a \$25 per person substitution fee. Substitutions may be made until May 26th and must be made in writing, accompanied by a new registration form. Substitutions may not be made on-site.

## Badges

Upon arrival at the Conference, visit the PWEA Registration Desk to pick up your badge/lanyard and other Conference materials. Everyone must have a badge to enter the Exhibit Hall, conference sessions, workshops, and food areas. **Badges will be checked, so please wear your badge in a visible area at all times.**

## Wireless Internet Service

Wireless internet service will be available at no charge in the Exhibit Hall.

## Consent for Use of Photographic Images

Registration and attendance at, or participation in, the PWEA Annual Technical Conference & Exhibition and related activities constitutes an agreement by the registrant to permit PWEA's use and distribution (both now and in the future) of his/her image in photographs, promotional materials, electronic reproductions, etc., of these events and activities.

## Time Between Sessions

An extra 5 minutes has been added between each of the Technical Program sessions to allow attendees time to move between Technical Programs, if they choose to do so.

## 5-Minute Vendor Presentations

Exhibiting vendors will be given the opportunity to make a 5-minute presentation about their products or services prior to the start of each of the half-day Technical Programs.

# What's Included with Your Conference Registration

	Technical Program Sessions	Workshops	Monday Exhibit Hall; Continental Breakfast; Breaks; Lunch; Reception; Annual Awards Ceremony	Monday PO & SYP Plant Tour	Monday Tailgate Dinner	Tuesday Exhibit Hall; Continental Breakfast; Breaks; Lunch; Women's Summit; Reception	Tuesday Stormwater Tour	Wednesday Continental Breakfast; Break
Full Conference	Yes	Discounted	Yes	No	No	Yes	No	Yes
Monday only	Yes	No	Yes	No	No	No	No	No
Monday only, YPs	Yes	No	Yes	Discounted	No	No	No	No
Tuesday only	Yes	No	No	No	No	Yes	No	No
Tuesday only, YPs	Yes	No	No	No	No	Yes	Discounted	No
Spouse Life Partner Registration	No	No	Yes	No	No	Yes	No	Yes

## Early Registration Discount

Register by March 31st and save \$50 on your Conference registration fee. In order to qualify if paying by check, payment must be postmarked by March 31st. (Discounted fees are noted on registration form.)

# 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.



## 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.**



## 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 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 a new event this year: Car Racing!

Hot Wheels cars will be raced down a track in the Exhibit Hall 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.





# Special Events

## Community Service Project

**Sunday, 11:00am-3:00pm**

This year marks the fifth annual PennTec Community Service Project. We hope you will consider joining the PWEA Students & Young Professionals (SYP) Committee to help with the Project. The event will take place at Hershey Gardens.

Hershey Gardens opened in 1937 with Milton Hershey's request to "create a nice garden of roses." More than 80 years later, the small rose garden has blossomed into 23 acres of botanical beauty providing visitors with unique experiences and enriching opportunities. Overlooking the town of Hershey, Hershey Gardens features a breathtaking assortment of flowers and shrubs, a stately collection of rare, signature trees, and various programs designed to delight visitors of all ages.

The historical highlight of Hershey Gardens, this is where it all began in 1937. The brilliant assortment of 3,000 roses representing 115 varieties includes an interesting mix of heights, colors and flower forms of Hybrid Tea, floribunda, shrub, and miniature roses, and features the new AARS rose variety winners each year.

Volunteers will be doing basic gardening tasks, such as planting annuals, weeding, mulching, etc. Volunteers are asked to bring their own work gloves and pruning shears or snips, if possible. The Garden will provide supplies for edging, mulching and weeding. Water, snacks and lunch will be provided.

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.



## Annual PWEA Golf Tournament

**Wednesday -- ~~Sunday, 12:00-4:00pm~~ 8:30am shotgun start**

Join your colleagues for a friendly game of golf at the Deer Valley Golf Course in Hummelstown, PA. The course is located about 15 minutes from the Hershey Lodge. Net proceeds from the tournament will benefit PWEA's Operations Challenge Program.

This 18-hole regulation course features large elevated greens, massive multi-tiered tees, and unique hybrid dwarf bluegrass fairways. Since opening, over 1000 trees and 50 planters have been added. The course includes a state-of-the-art irrigation system and continuous cart paths. From several locations, you can enjoy beautiful views and vistas of Hershey and Blue Mountain.



**Cost is \$110 per person (or \$400 per foursome), and includes greens fee, golf cart, lunch and refreshments. You must register by May 26th; 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.)

## 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 in a hotel lounge. Details will be sent with the official booth confirmation email.



# Special Events

## 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.**

## Plant Tour

### Hosted by the Professional Operators and Students & Young Professionals Committees Derry Township Municipal Authority, Clearwater Wastewater Treatment Facility

**Monday, 1:00-3:30pm**

The Derry Township Municipal Authority (DTMA), located in Hershey, PA, maintains a forward-thinking approach for its services and has continuously implemented self-sustaining facility improvements over the years at their Clearwater Wastewater Treatment Facility (WWTF). For nearly four decades, the DTMA has operated a hauled-in-waste program (Septage, FOG, Municipal Sludge, and Food Waste) which provides an



alternate source of revenue through tipping fees. In 2000, the commissioning of the anaerobic digestion process enabled the DTMA to enhance their on-site energy recovery and solids management by utilizing the biogas for beneficial uses such as the thermal drying process, digester heating, and to fuel a 280-kW combined heat and power (CHP) system. With the excess biogas resulting from the co-digestion of high strength organic waste (HSOW or Food Waste), the DTMA embarked on the completion of the Energy Enhancements project in 2020 to improve upon the plant's capacity for accepting additional HSOW, to utilize the on-site renewable energy, and to approach "Net Zero" energy at their Clearwater WWTF. The project includes biogas storage and mixing improvements to the existing secondary anaerobic digester, new biogas conditioning system for H<sub>2</sub>S removal and a regenerative siloxane removal system, and two (2) 1-MW CHP engines housed in a new building. The project is anticipated to be completely operational by Spring 2023.

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

## 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.**



## 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.**





## Special Events

### Stormwater Tour Hosted by the Stormwater Committee Derry Township Municipal Authority Bullfrog Valley Stream Restoration Tuesday, 9:00am-11:30am

Derry Township is undertaking the restoration of a waterway extending approximately 1,800 linear feet upstream of Bullfrog Valley Park. The project will serve as a sediment reduction BMP for the Township's Chesapeake Bay Pollutant Reduction Plan, but also provide a number of other benefits. At the bottom of the project area, the stream discharges into a pond at Bullfrog Valley Park. At this location, the stream deposits silt and sediment into the pond which requires periodic dredging. By stabilizing the streambanks, this deposition and need for dredging is reduced, and some of the deposited material from the pond could be reincorporated into the grading for the stream restoration project. Similarly, rock removed from a sanitary sewer extension project located elsewhere in the same geologic formation could be reincorporated into the streambank stabilization measures, and a careful inventory of trees being removed was taken so that their trunks and root wads could be reused as in-stream structures. A highly traveled multi-use trail runs parallel to the stream, providing ample opportunity for public education and outreach and a portion of the sediment reduction credits from the project were transferred from Derry Township to a neighboring municipality under an inter-municipal agreement.



**Be sure to register in advance in order to reserve your seat on the bus. A limited number of tickets may be available on-site. The cost is \$35 per person. Bus will begin boarding at 8:30am and will depart at 8:45am.**



### Operations Challenge Tuesday, 9:40-10:40am

**How do operators and technicians overcome flooding, a sewer collapse, process failure, and other emergencies?** Do you ever wonder what transpires behind the scenes during the operation of a water resource recovery facility? Instead of continuing to take these unsung specialists for granted, watch this year's demo to learn how the wastewater collection and treatment personnel display their skills at the Operations Challenge.

During a competition, teams compete to earn the highest score in five different events. Each team includes four members and often a coach as well. Each event is designed to test the diverse skills required for the operation and maintenance of water resource recovery facilities, collection systems, and laboratories. The five events are collections systems, laboratory, process control, maintenance, and safety.

### 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.**





## 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.



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

### 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?

## Hotel Accommodations

### Hershey Lodge • 325 University Drive • Hershey, PA 17033

A block of rooms has been reserved at the Hershey Lodge for PennTec 2023. Reservations will be accepted beginning February 13 and must be made by May 19, 2023. Rooms may not be available after this date. The discounted room rate is as follows:

\$249.00 per Room for Single/Double Occupancy (all rooms are non-smoking)

Overnight guests receive a complimentary ticket to the Hershey Gardens and the Hershey Story Museum. Also included at no charge for all overnight guests is the hotel's miniature golf course, the arcade, an outdoor pool, and Hershey's Water Works – a 30,000 square foot indoor pool complex and water park.

Call Reservations at 1-855-729-3108 and mention PennTec 2023 to receive the discounted rate. Online reservations can be made by going to the link provided on PWEA's website.



# Technical Program Details

An extra 5 minutes has been added between each session to allow attendees time to move between Technical Program rooms, if they choose to do so.

## MONDAY MORNING

### BIOSOLIDS PROGRAM

#### Bioenergy

*Moderators: Charles Winslow, GHD; and Richard Valiga, Tully Environmental*

#### **8:40-9:10am – Digester Upgrade and Expansion for Cogeneration Coupling Membrane Gasholders Covers with Microturbine Generators**

*Speakers: Britt Bassett, PE, Bassett Engineering, Inc.; and  
Michael Matechak, Lackawanna River Basin Sewer Authority*

Lackawanna River Basin Sewer Authority installed dual membrane gasholder covers on the anaerobic digesters at its Throop Wastewater Treatment Plant. This dramatically expanded gas storage and also increased sludge storage which in turn increased sludge detention time, VSS destruction, gas production, and electricity generation, which reduced operating costs.

#### **9:15-9:45am – Maximizing the Value of Biosolids from THP at the Piscataway WRRF Bio-Energy Project**

*Speaker: Joe Uglevich, Stantec*

The Washington Suburban Sanitary Commission (WSSC) is in the process of implementing a Bio-Energy project to thermally hydrolyze and anaerobically digest all biosolids from their five Water Resource Recovery Facilities (WRRFs). The WSSC bioenergy project is aimed at capturing the maximum value of the process without compromising the very real capital investment constraints.

#### **10:15-10:45am – Biosolids Processing Alternatives Evaluation: Towamencin Municipal Authority Case Study**

*Speaker: Wade Yankey, Material Matters, Inc.*

A biosolids planning study was completed for Towamencin Municipal Authority to identify and evaluate viable alternatives for biosolids processing and associated beneficial use options. Presentation will include results of technology alternatives evaluation, a comparison of energy efficiency and 20-yr costs for short-listed technologies: anaerobic digestion, composting, thermal drying, pyrolysis, and gasification.

#### **10:50-11:20am – Thermal Processing Resiliency and Sustainability: Comparison of Pyrolysis, Gasification, and Incineration with Real-World Applications**

*Speaker: Charles Winslow, PE, GHD*

This presentation examines the fundamental differences between biological and thermal oxidation, with a particular focus on the three most common thermal technologies - pyrolysis, gasification, and incineration. These technologies are compared in terms of end product quality, greenhouse gas emissions, fossil fuel demand, and bioenergy potential.

#### **11:25-11:55am – Unattended Operation Using Unique Design Features & Remote-Monitoring and SCADA Optimizes Dryer Capacity and Performance for PFAS Pretreatment Prior to Pyrolysis/Gasification or Volume Reduction**

*Speaker: Rick Treleven, BCR Environmental*

Incorporating dryers into biosolids processing operations at wastewater-treatment facilities, for Class A & Volume reduction or Pretreatment to Pyrolysis or Gasification for PFAS destruction, must consider the coordination between existing operating schedules and processing rates as well as the balance between capacity and capital cost.

### COLLECTION SYSTEMS PROGRAM

#### Collection System Maintenance and Rehabilitation

*Moderators: Hyon Duk Shin, Gannett Fleming; and  
Jeff Cantwell, Flow Assessment Services*

#### **8:40-9:10am – Town of Swampscott, MA, Stacy's Brook Comprehensive Sewer Rehabilitation – Lessons Learned from Lateral Renewal**

*Speakers: John Rahill, EIT, and Cecilia Carrion-Carmona, both with Kleinfelder*

The Town of Swampscott, MA is completing a comprehensive sewer rehabilitation program to reduce concentrations of bacteria in the stormwater discharging at King's Beach. Kleinfelder's presentation will provide a discussion on the design approach and lessons learned regarding the design and construction of cured in placed pipe (CIPP) lateral lining.

#### **9:15-9:45am – ACUA Ventnor Margate Emergency FM HDD Replacement**

*Speakers: Michael E. Bisignani, PE, and David Woolley, EIT, both with GHD*

ACUA experienced multiple critical failures of its Ventnor Margate Forcemain which conveys raw sewage via a 24/30-inch pipeline from pumping stations to the ACUA WWTP. Due to the difficult alignment around Bader Air Field, under the bay, Atlantic City Expressway, Amtrak, and many environmentally sensitive areas HDD was utilized.

#### **10:15-10:45am – Providing Emergency Response and Funding Support to Replace Failing Sewer Infrastructure**

*Speaker: Sean P. Riley, PE, HDR*

After sewer failure in a stream, a collaborative effort between HDR, the City of Steubenville, Ohio, and the Contractor was necessary to mitigate the situation quickly, efficiently, and within regulatory requirements. The importance of communication and proactive engagement of regulators and the importance of securing funding will be demonstrated.

#### **10:50-11:20am – Stuck Between a Rock and a Hard Place – What to Do with Your Failing Infrastructure**

*Speaker: Ashley Reed, PE, Greenman-Pedersen, Inc.*

Much of the sewer infrastructure within the Borough of Ellwood City was installed back in the early 1900's. The main interceptor line runs along a steep hillside above Connoquenessing Creek and is inaccessible and in disrepair. Learn how we overcame physical and regulatory obstacles to replace the failing interceptor.

#### **11:25-11:55am – Clearing Up the FOG: Fats, Oils & Grease**

*Speaker: Tori Morgan, LO, Entech Engineering, Inc.*

Several FOG Programs that Entech Engineering recently implemented varied in size and scope, specifically crafted to the needs of those clients. All started with a comprehensive understanding of the collection system, then followed six steps to create the FOG Program, resulting in enhanced system operations and improvement of the environment.



# Technical Program Details

## ENGINEERING & CONSTRUCTION PROGRAM

### Constructability

*Moderators: Robert Dengler, Gannett Fleming; and Robert McIntyre, Stone Hill Contracting Co.*

#### 8:40-9:10am – Investigative-Design-Build Keeps GLWA's Repair Projects Flowing

*Speakers: Brian Gombos, PE, Wade Trim; and Rob Johnson, PULLMAN*

The Great Lakes Water Authority (GLWA) is responsible for the operation and maintenance of the CSO facilities in its footprint. Understanding that the repair of these structures required a higher level of investigation, solution building and budget adherence, GLWA chose the Investigate-Design-Build Delivery system for a major repair of the CSO outfall structures.

#### 9:15-9:45am – Creative Approaches to Successfully Managing Treatment System Upgrade Programs

*Speaker: Diane Altland, PE, Greenman-Pedersen, Inc.*

Proposed upgrades will improve the plant's effluent quality and increase the overall ADF capacity from 6.0 to 8.4 MGD. Challenges included maintaining plant operations and compliance during the 2-year construction which was overcome with construction sequencing and taking equipment offline during low flow periods.

#### 10:15-10:45am – Facilitating Large Construction Projects by Advancing Strategic Utility Improvements

*Speaker: Mason Beck, PE, HDR Engineering*

As part of DELCORA's deep tunnel wastewater program a utility staging project was developed to facilitate multiple parallel construction contracts and reduce future impacts to plant operations. This presentation will provide an overview of the utility improvements, including tapping and bypass of two existing large diameter wastewater forcemains.

#### 10:50-11:20am – Modern Construction Inspection and Administration Tools

*Speaker: Brad Sick, PE, Larson Design Group*

Broad overview of various modern construction-phase tools, with an emphasis on general benefits and challenges, supported by examples across a variety of wastewater treatment and collection projects. Four general categories will be covered: cloud-based document management and data collection systems, photo and video collection, 3D modeling, and asset management.

#### 11:25-11:55am – Keeping the Bugs Alive - Planning for ALCOSAN's Secondary Treatment Bypass

*Speakers: Meredith Welle, PE, HDR; Rucha Shah, Arcadis; and Jeff Argyros, ALCOSAN*

The ALCOSAN North End Project first secondary treatment shutdown that occurred in December 2022, the coordination with ALCOSAN operations and maintenance staff that occurred months ahead of time, and any lessons learned from the shutdown that will be important to carry into the subsequent secondary shutdowns.

## STORMWATER PROGRAM

### Stormwater Management at the Site Level

*Moderator: Nathan Walker, Gannett Fleming*

#### 8:40-9:10am – Mansfield Borough Pipe Arch Replacement Study

*Speaker: Steven Rowe, PE, Larson Design Group*

Larson Design provided an Engineering Study for replacement options for a 50-year-old pipe arch that is undersized and causing flooding within the Borough. The Study determined that the existing pipe arch can convey a 2-year storm event and options for a culvert that could handle the 100-year storm event were proposed.

#### 9:15-9:45am – Construction Lessons Learned from an Innovative Stream Restoration

*Speakers: Shawn Fabian, CPESC, CPSWQ, Herbert, Rowland & Grubic, Inc.; and Monique Dykman, Londonderry Township*

Thorough investigative techniques during the permitting phase of a stream restoration can pay big dividends during construction. Learn why and hear creative techniques for storing, treating, and recycling large quantities of legacy sediment in this case study of the award-winning Conewago Creek Stream Restoration.

#### 10:15-10:45am – Innovative Approaches for Improving Water Quality of Ponds and Creating Community Amenities

*Speakers: Daniel Wible, Susan Beck, Claire Maulhardt, and Angela Brackbill, all with Jacobs*

This presentation will discuss two innovative water quality/community amenity projects. In the City of Lancaster, PA, stormwater treatment wetlands are planned to help achieve the City's Chesapeake Bay Pollutant Reduction Plan. In Harrisburg, PA, Capital Region Water is retrofitting two historic community ponds using smart stormwater controls to optimize performance.

#### 10:50-11:20am – Improved Acid Mine Drainage (AMD) Treatment Systems with Innovative Technically Advanced Equipment

*Speaker: Harley Schreiber, WesTech Engineering LLC*

Acid mine drainage (AMD) treatment plants are crucial in cleaning up contaminated waters across the coal mine regions. Process refinements improve system efficiency and reduce cost, as they enable AMD plants to control, manage, and reuse contaminated water streams while safely disposing of toxic wastewaters. This presentation focuses on AMD treatment plants and processes used.

#### 11:25-11:55am – Weathering the Storm 2.0: Challenges to Stormwater Fees

*Speakers: E. Lee Stinnett, Esq, and Isaac P. Wakefield, Esq, both with Salzmann Hughes, P.C. Attorneys at Law*

Join us for an update of the evolving legal landscape of stormwater fees. Achieve an understanding of new Pennsylvania and national caselaw. Review critical elements of properly structured stormwater fees and receive information on how interested authorities may pursue setting up or amending their own program.

## UTILITY MANAGEMENT & GOVERNMENT AFFAIRS PROGRAM

### Managing Assets in the Digital Age

*Moderators: Mark Pickering, GHD; and Maria White, PA One Call System*

#### 8:40-9:10am – Security is Not Just Tech:

##### Developing Effective Policy, Plans, and Procedures

*Speaker: Bob George, CISSP, CDM Smith*

Policy and planning take a backseat to technology in security planning, yet over 70% of the controls identified in the NIST Cybersecurity Framework pertain policy. This presentation illustrates an approach that utilities can apply to develop effective policies and plans.

#### 9:15-9:45am – Starting on the Road to Digital Transformation

*Speaker: Alton Whittle, GHD*

GHD's Aquanomics (water risk) model projects a total loss of \$3.7 trillion to US GDP by 2050. It is critical for utilities to accelerate their digital transformation by adopting agile processes and smart analytics to improve performance, customer satisfaction, mitigating environmental concerns, and adapting to a dramatically changing environment.

# Technical Program Details

## 10:15-10:45am – A Data-Driven Approach to Increasing Compliance Margins

Speaker: Kevin Flis, Xylem

The audience will learn how leveraging a digital twin to evaluate treatment plant performance will enhance the capabilities of the operations staff and result in better compliance margins and reduced energy and chemical consumption.

## 10:50-11:20am – Lifecycle Management of Operations Technologies

Speakers: Heather Heltzinger, Renegade Solutions, LLC; and William Teodecki, LO, Aqua America

Disparate Operational Technology (OT) systems, such as SCADA, CCTV Systems, Power Generation, BAS, and LIMS, are comprised of components responsible for controlling and monitoring the environment. Lifecycle management is critical to ensure the efficacy, security, and reliability of critical OT systems. Emerging Standards and Practices to be considered will be discussed.

## 11:25-11:55am – Improving Field Mobility & Digital Record Keeping with GIS

Speaker: Kenneth A. de Groh III, PE, Suburban Consulting Engineers Inc.

Utilizing GIS software saves time and money by collecting, accessing and sharing utility information in real time. This presentation will provide an overview of benefits of field-based digital web mapping, GIS-based inspection forms, utilization of dashboard views to summarize information and metrics and leveraging high accuracy GNSS to improve productivity.

## MONDAY AFTERNOON

### 12:55-1:00pm – 5-Minute Vendor Presentations

Exhibiting vendors will be given the opportunity to make a 5-minute presentation about their products or services prior to each of the half-day Technical Programs. Topics will be announced in the On-Site Conference Program.

### BIOSOLIDS PROGRAM

#### PFAS and Bioenergy

Moderators: Charles Winslow, GHD; and Richard Valiga, Tully Environmental

### 1:00-1:30pm – The Opportunity for WRRFs to Advance Regional GHG Reduction Goals

Speaker: Jay Surti, PE, GHD

GHG footprint reduction goals are driving cities and utilities to adopt a holistic resource recovery approach for organic waste streams typically disposed in landfills. Using case studies, the authors will share their experience and lessons learned assisting early North American adopters with implementation of organic resource recovery and co-digestion facilities.

### 1:35-2:05pm – PFAS Emissions Testing for Biosolids Pyrolysis and Incineration

Speaker: John Ross, Brown and Caldwell

Findings from a recent literature review of thermal PFAS treatment in biosolids will be presented, as well as a review of studies led by the co-authors to evaluate the fate of PFAS in two incinerators and a pyrolysis facility. Objective: Provide a framework for assessing the effectiveness of destruction technologies.

## 2:10-2:40pm – Technology Demonstration and Cost Analysis for PFAS Destruction in Biosolids

Speaker: Micah Blate, Hazen and Sawyer

The EPA PFAS Innovative Technology Team identified pyrolysis and supercritical water oxidation for destroying PFAS. The presentation will highlight results from three projects: WRF #5107: Understanding Pyrolysis for PFAS Removal; Demonstration AirSCWO – 6 at Orange County Sanitation District in CA; and Minnesota Pollution Control Agency Analysis of Alternatives for PFAS Destruction.

## 3:40-4:10pm – Using Recycled Glass in Reed Beds

Speaker: Jason S. Coyle, LO, Spotts, Stevens and McCoy

Four wastewater treatment facilities in Central Pennsylvania have taken an innovative approach to the construction of reed beds at their plants by using recycled glass instead of sand. These are some of the first cases of this in Pennsylvania and have opened a door for other plants across the nation.

## 4:15-4:45pm – Leaving It In the Dust – Full Scale Piloting of Dust Suppression Methods for Dried Biosolids

Speaker: Megan Brown, PE, Jacobs

A pilot test was completed to evaluate dust reduction by dust suppressant addition for dried biosolids. Dust suppressant was applied in an existing screw conveyor used for truck loading. This presentation will review complications encountered during testing, adaptations that were made to produce a partly promising result, and lessons learned.

### COLLECTION SYSTEMS PROGRAM

#### Pump Station Rehabilitation

Moderators: Alexandria King, Arcadis; and Roger Lehman, Weston Solutions

### 1:00-1:30pm – A Space Saving Approach to Pump Station Expansion

Speaker: Gautam Patwardhan, PE, Remington & Vernick Engineers

Wastewater Pump Station design is regularly limited by site or capital restraints. The site in this case study is bordered by high-pressure gas lines to the back, and wetlands or restricted land on all sides. This presentation discusses the design process of expanding the station's capacity without changing the footprint.

### 1:35-2:05pm – Pump Station Rehabilitation Leads to Long-Term Reliability Improvement and Preservation of Assets

Speakers: Jeff Naumick, PE, Hazen and Sawyer; and Thomas LaRocco, PE, Cape May County MUA

The Cape May Municipal Utilities Authority (CMCMUA) engaged in the rehabilitation of thirteen (13) wastewater pumping stages during off-peak seasons. Pump station inspection, design, and construction phase services included the bypass pumping of each station and the rehabilitation of the structural and mechanical features with the intent of restoring them to "like new" condition.

### 2:10-2:40pm – Evaluation of a Treatment Plant Pump Station for Improved Operations

Speaker: Casey Cowan, PE, GHD

Faced with aging equipment, the Niagara Falls Water Board had to determine what to do with their four 250 HP eddy current variable speed pumps at their WWTP to maintain system reliability.



# Technical Program Details

## 3:40-4:45pm – Mobile Sessions in the Exhibit Hall

*Moderator: Jim Shelton, Arcadis*

The PWEA Collection Systems Committee is bringing a successful concept from the WEFTEC Conference and the WEF Collection Systems Specialty Conference to the PennTec Conference: Mobile Sessions in select exhibit booths. Moderators will lead small groups to the presentations. Attendees receive the same credit as if they were attending a classroom presentation. Presentations are educational, not sales pitches. Topics will be announced in the On-Site Conference Program.

### ENGINEERING & CONSTRUCTION PROGRAM

#### Wastewater Treatment Design & Case Studies

*Moderators: Robert Dengler, Gannett Fleming; and  
Scott Armbrust, PA American Water Co.*

#### 1:00-1:30pm – Hiccups and Speed Bumps – Years One and Two Construction of a New 300 MGD Headworks in the City of Philadelphia

*Speaker: Isaac Katz, PE, ENVSP, Whitman, Requardt & Associates, LLP*

Construction has begun on a Preliminary Treatment Building adding 300 MGD of wet weather capacity to the Philadelphia NEWPCP. A year and a half into a four-year project, where are we, how did we get here, and how do we see this project playing out?

#### 1:35-2:05pm – LTTJMSA Lake Carey WWTP & LPSS

*Speaker: Steven Rowe, PE, Larson Design Group*

Lake Carey is a lake community that is located in Wyoming County, PA. All of the residential properties around the lake are served by failing on-lot disposal systems. LDG designed a conveyance system and new WWTP, and is currently overseeing the construction of these improvements.

#### 2:10-2:40pm – Enhancing Nitrification Stability with Chemically Enhanced Primary Treatment

*Speaker: Benjamin Deatrich, PE, AECOM*

The City of Bethlehem's WWTP is implementing CEPT to improve primary settling performance and aid in the stability of nitrification to manage effluent NH<sub>3</sub> concentration by reducing organic loading to secondary treatment. Process design and bench testing to develop storage needs, metering pumps, and mixing devices will be presented.

#### 3:40-4:10pm – Optimizing Biological Nitrogen Removal Within Existing Tankage at the Lancaster AWWTP

*Speaker: Brian Lubenow, PE, PMP, CDM Smith*

The pure oxygen Lancaster AWWTP was upgraded to optimize the existing biological nutrient removal process to meet Total Nitrogen limits at flow of 26 mgd within existing tankage. Improvements included converting tankage to anoxic conditions, DO-based oxygen control, and structural repairs to reduce oxygen leakage.

#### 4:15-4:45pm – LOOP MBR: Cost-, Energy- and Space-Saving Cyclical Step Feed MBR Process with Uniquely High Denitrification Efficiency

*Speaker: Larry Morris, Kubota Membrane USA Corporation*

This presentation describes a new MBR-based wastewater treatment process, LOOP MBR (Low Opex and OPTimized MBR), and reports the results of successful pilot studies where 90% nitrogen removal was achieved without post-denitrification or additional carbon source addition. N-removal is achieved by the cyclical step feed system with a 12Q recycle.

### STORMWATER PROGRAM

#### Stormwater Management at the Regional Level

*Moderator: Nathan Walker, Gannett Fleming*

#### 1:00-1:30pm – Next Generation Stormwater Master Planning

*Speaker: Andrew Anderson, PE, Hazen and Sawyer*

Recent history has demonstrated how rapidly and unexpectedly watershed conditions and priorities can change, which can quickly diminish the value of a conventional stormwater master plan. This presentation will provide examples of the range of tools and approaches available to municipalities to support next generation stormwater master planning efforts, while discerning the benefits and limitations of these tools.

#### 1:35-2:05pm – The Social and Economic Impacts of an Urban Flood Prone Watershed in Pittsburgh, PA and Nature Based Strategies for Flood Mitigation

*Speakers: Tom Batrone, PE, CFM, HDR; and  
Lisa Brown, Watersheds of South Pittsburgh*

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 persistent flooding and using this information for developing flood mitigation strategies.

#### 2:10-2:40pm – Blue and Green Infrastructure for Climate Resiliency: A New Orleans Case Study

*Speaker: Bernadette Callahan, PE, Stantec Consulting Services Inc.*

Successful urban water management strategies that promote resilient and adaptive design require us to explore to a new norm of treating water as a resource instead of a nuisance or threat. This presentation highlights the importance of blue and green infrastructure with a New Orleans case study.

#### 3:40-4:10pm – Public Outreach Success for All

*Speaker: Barbara Arnold*

Collaborating with school systems and other large properties in a municipality can increase understanding, improve community relations, and provide ongoing growing of BMPs for future generations.

#### 4:15-4:45pm – MS4 Permit Update Roundtable

When managing stormwater, municipalities must balance routine storm sewer maintenance with flood mitigation projects, public education, and MS4 water quality mandates. At this roundtable, ask MS4 permittees and stormwater experts about the tools and cost-effective approaches that communities can use to address increasing stormwater demands.

### UTILITY MANAGEMENT & GOVERNMENT AFFAIRS PROGRAM

#### Managing Risk in Today's Regulatory Environment

*Moderators: Nicole Brown, Suburban Consulting Engineers; and  
Elizabeth Cheeseman, GHD*

#### 1:00-1:30pm – Extracting Actionable Findings from a Condition Assessment of Over 8,000 Assets

*Speakers: Benjamin Deatrich, AECOM; and  
Melanie Murphy, Philadelphia Water Department*

This presentation will review steps taken by the Philadelphia Water Department (PWD) to assess the conditions of over 8,000 vertical wastewater assets and discuss how PWD overcame the challenge of translating the collected data into an actionable replacement schedule for its wastewater treatment plants.

# Technical Program Details

## 1:35-2:05pm – Human Resources: Retention and Recruiting the 21st Century Worker

*Speaker: Heath Edelman, PE, LO, Thaddeus Stevens College of Technology*

Water utilities are finding it increasingly difficult to recruit, hire, and retain talent in this post-COVID-19 labor market. This presentation will review current challenges including escalation of labor costs, legal concerns, ethics, and succession planning. Historical approaches to recruiting and hiring should be reimagined and workforce development merged with community outreach initiatives.

## 2:10-2:40pm – Risk Management Perspectives Panel

*Panelists: Tom Spokas, Philadelphia Water Dept (Large Utility); Mike Kyle, Lancaster Area Sewer Authority (Medium Utility); Small Utility panelist TBA*

Managers of large, medium, and small utilities will engage with the audience on how they manage fiscal and operational risks in today's world.

## 3:40-4:45pm – DEP Update

*Speaker: Jay Patel, PA Department of Environmental Protection*

DEP will present an update on various initiatives and ongoing changes to its regulations and policies that could affect you as an operator or manager of a utility.

## TUESDAY MORNING

### 7:55-8:00am – 5-Minute Vendor Presentations

Exhibiting vendors will be given the opportunity to make a 5-minute presentation about their products or services prior to each of the half-day Technical Programs. Topics will be announced in the On-Site Conference Program.

### BIOSOLIDS PROGRAM

## 11:15-11:45am – Mobile Sessions in Exhibit Hall

*Moderator: Chris Boyd, Charter Machine Company*

The PWEA Biosolids Committee is bringing a successful concept done by the Collection Systems Committee for the past several years: Mobile Sessions in selected booths. Moderators will lead small groups to the presentations. Attendees receive the same credit as if they were attending a classroom presentation. Presentations will be educational, no sales pitches. Topics will be announced in the On-Site Conference Program.

### COLLECTION SYSTEMS PROGRAM

### System Technologies

*Moderators: Elizabeth Cheeseman and Melissa Smith, both with GHD*

## 8:00-8:30am – Innovation vs. Risk: Using Artificial Intelligence Responsibly to Augment the Role of CCTV Operators in Wastewater Inspections

*Speaker: Justin Starr, PhD, Community College of Allegheny County*

Artificial Intelligence has been touted as a technology with the potential to replace CCTV operators. This positioning is unrealistic, as inspectors provide essential data about system health. Instead, we will show how AI deployed correctly – as a 'decision support' tool – can compensate for cognitive overload and augment rather than replace an inspector.

## 8:35-9:05am – Assessing I&I Issues Using Intelligent Data Collection and Management Systems

*Speaker: Ifeanyi Odigbo, PE, CFM, CPESC, Greenman-Pedersen, Inc.*

Accurately identifying and assessing I&I and its impacts on collection systems and WWTPs has always been problematic. This paper presents Smartwater approaches and techniques you can use to characterize flows in your systems which will enhance assessment and mitigation efforts while reducing costs.

## 9:10-9:40am – The Implementation of Artificial Intelligence for Optimizing Odor Control Chemical Dose Rates

*Speaker: Calvin Horst, Evoqua Water Technologies*

This presentation will demonstrate the successful use of artificial intelligence for the routine optimization of dosing odor control chemicals into a wastewater collection system. Included are the results of its implementation in two odor control applications, optimized weekly resulting in as good or better odor control without increasing chemical usage.

## 10:40-11:45am – Smart Panel

*Panelists: Alton Whittle, GHD; George Sarapa, GPI; additional panelists TBA*

The advancement of Smart Technologies to function as a tool to assist in the operation and management of collection systems has progressed significantly in recent years. Please join us for a discussion with industry experts to discuss the current and future state of Smart Technologies and applications.

### ENGINEERING & CONSTRUCTION PROGRAM

### PFAS and Wastewater

*Moderators: Jeremiah Stratton, Bowen Engineering Corp; and Scott Armbrust, PA American Water Co.*

## 8:00-8:30am – Designing a PFAS Removal System – More Than Just Carbon

*Speaker: Mark A. Hubal, PE, BCEE, Remington & Vernick Engineers*

Per- and polyfluoroalkyl substances (PFAS) are a high-priority concern in the water/wastewater sectors. There are thousands of PFAS compounds; several are already regulated by certain states. EPA will soon be promulgating regulations - utilities should prepare to design treatment. This presentation will review different treatments and issues/constraints associated with each.

## 8:35-9:05am – PFAS in Wastewater: Promising Management and Treatment Strategies

*Speaker: Jay Surti, PE, GHD*

Using case studies, this presentation will provide regulatory updates, steps wastewater utilities can take to evaluate and mitigate PFAS risks through promising management strategies such as source control, adaptive planning, implementing treatment (separation and destruction) to address PFAS challenges, and disposal approaches for PFAS laden treatment media.

## 9:10-9:40am – PFAS Treatment Design 102: Beyond the Basics

*Speakers: Jon Reuther, PE, and Kyle Hay, PE, both with Brown and Caldwell*

It's important for utilities to keep abreast of the rapidly changing PFAS treatment industry to appropriately respond to potential challenges. Utilities and consultants will benefit from this presentation which will move beyond design basics and shine a light on some of the unique challenges associated with PFAS treatment in drinking water.

## 10:40-11:10am – A Multi-Pronged Approach for Managing PFAS in Water Resource Reclamation Facilities

*Speakers: Mohammad Abu-Orf and Micah Blate, both with Hazen and Sawyer*

PFAS are ubiquitous, mobile, persistent, and can be cycled within the WRRF and be present in the effluent and biosolids. This presentation will provide insights into how two WRRFs are utilizing a combination source control, and terminal liquids and biosolids treatment technologies to address PFAS.



# Technical Program Details

## 11:15-11:45am – PFAS Considerations for Wastewater Professionals

Speaker: Kevin W. Custer, PhD, Pace Analytical Services, LLC

In this session you will learn about PFAS sources and receivers for wastewater systems, selecting the applicable test methods, field sampling considerations, and a regulatory update at the federal and state levels.

## INDUSTRIAL WASTE PRETREATMENT PROGRAM

Moderators: Jenna Bishop and Dave Schlott, Jr.,  
both with ARRO Consulting, Inc.

## 8:00-8:30am – PFAS Removal? Problem Solved

Speaker: Mike Cecil, DBIA, Cecil Consulting, LLC

The first-of-its-kind patented system for PFAS removal! This is the latest buzzword in the industry, and you will learn all about groundbreaking technology that is proven and currently going through extensive pilot testing. A case study on the city of Summerville, Georgia. It is intriguing.

## 8:35-9:05am – Sampling 101

Speaker: Brad Griffiths, M.J. Reider Associates

To obtain representative and legally defensible sampling results, it is necessary to follow specific protocols that are standard practice in the industry. This session will cover the basics of industrial user sampling, including sample types, field parameters, equipment maintenance, chain of custody, sample preservation and hold times, etc.

## 9:10-9:40am – Degreasing the Pipes: Effectively Processing FOG at the Central WPCF

Speaker: Kelly Baxter, PE, Mott MacDonald

The Ocean County Utility Authority is looking to improve handling of fats, oils, and grease (FOG) at its Central Water Pollution Control Facility. This presentation details challenges and engineered solutions associated with bulk FOG conveyance and storage. Learn also how OCUA plans to beneficially use FOG.

## 10:40-11:10am – Most-Open-Valve Automation Automated Solutions for Optimizing Aeration Blowers Using VFDs & Advanced Controls

Speaker: Bob Kisler, Hoffman & Lamson

A successful control system design must integrate the process requirements at the basins, the distribution of air flow between basins, and control of the blowers providing the air flow. A variety of parameters must be incorporated into the control logic for each portion of the process.

## 11:15-11:45am – Elements of an Industrial User Permit

Speaker: Jenna Bishop, ARRO Consulting, Inc.

This presentation reviews the requirements of an industrial user permit required for all industrial users that are part of the industrial pretreatment program as required by 40 CFR Part 403.

## PRIVATIZATION PROGRAM

Moderator: Michael Kyle, Lancaster Area Sewer Authority

## 8:00-9:40am – Privatization Issues for Water and Wastewater Authorities in Pennsylvania, Part 1

Speaker: Steven A. Hann, Esq, Hamburg, Rubin, Mullin, Maxwell & Lupin

This presentation will cover the background of privatization. Privatization is a misunderstood phenomenon occurring with our water utilities. While there are certainly cases where a private utility is more beneficial to a community than a public one, and vice-versa, communities need to prepare and educate themselves to make informed decisions for their community now and in the future. An informed decision should be made based on the right information and data. This presentation will cover the background of privatization, the Municipality Authorities Act, Act 12 of 2016, the Public Utility Commission, resources for Municipal Authorities regarding private party acquisitions, the value of a Municipal Authority to the community and recent examples of privatization.

## 10:40-11:10am – Privatization Issues for Water and Wastewater Authorities in Pennsylvania, Part 2

Speaker: Steven A. Hann, Esq, Hamburg, Rubin, Mullin, Maxwell & Lupin

This is a continuation of the earlier presentation. See description for Part 1.

## 11:15-11:45am – Our Negotiation with Privatization: The Financial Analysis

Speaker: John Larson, Norristown Sewer Treatment Plant

The Norristown Sewer Authority operates the sewer system for Norristown, PA. The Municipality of Norristown and the Authority experienced full exposure to selling their assets to a private organization. This presentation will examine the financial analysis and politics that drove the final outcome.

## PROFESSIONAL OPERATORS PROGRAM

Moderator: Dennis Duryea, Kiski Valley Water Pollution Control Authority

## 8:00-8:30am – Will It Fit? Using 3D Laser Scanning Technology to Integrate New Infrastructure into Existing Facilities

Speakers: Dan Goodwin, PE and Neil Wakeman, both with Wade Trim, Inc.

Recently our industry has been challenged to retrofit new projects into existing infrastructure. Reality capture is a technological advancement that allows digital capture of existing facilities that can be transformed into a 3D model for use in design, allowing for new facilities to be designed in and around existing infrastructure.

## 8:35-9:05am – Facility Planning for Nutrient Removal Using Proactive Testing of Innovative Technologies

Speaker: Sean McKelvey, PE, Philadelphia Water Department

The Philadelphia Water Department (PWD) has explored different innovative nutrient management technologies to meet pending effluent ammonia and TN limits. This presentation will cover desktop, bench, and ongoing pilot studies for evaluating an innovative nutrient management technology called the Nuvoda mobile organic biofilm (MOBTM).

## 9:10-9:40am – Pilot Testing of Peracetic Acid as a Disinfectant at the Jeannette Wastewater Treatment Plant

Speaker: James Lloyd, PE, Hazen and Sawyer

In 2022, the Municipal Authority of Westmoreland County (MAWC) conducted bench-scale and pilot testing programs that studied the effectiveness of peracetic acid as a disinfecting agent for their Jeannette Wastewater Treatment Plant. This presentation will discuss the study methodology, the results, and next steps.

# Technical Program Details

## 10:40-11:45am – Advanced Biological Nutrient Removal

*Speaker: Dennis J. Barnes, PE, Xylem, Inc.*

Traditionally, Biological Nutrient Removal was based on nitrification in aerobic zones, denitrification in non-aerated anoxic zones, and non-aerated anaerobic zones to enhance biological phosphorus removal. In recent years, other pathways to achieve BNR have been demonstrated. The benefits of using these pathways to achieve BNR will be discussed.

### UTILITY MANAGEMENT & GOVERNMENT AFFAIRS PROGRAM

#### Project Planning and Financing

*Moderators: Peggy Miller, RETTEW; and Maria White, PA One Call Systems*

## 8:00-8:30am – Act 537 Sewage Facilities Planning from a Utility Management Perspective

*Speaker: William L. Bohner, Jr., PE, ARRO Consulting, Inc.*

This presentation will look beyond Act 537 Sewage Facilities Planning as the municipal and regulatory exercise to plan for future wastewater needs. It will provide an overview of how to plan operationally to be ready for future wastewater flows related to potential upgrade to collection, conveyance, and treatment systems.

## 8:35-9:05am – Accelerate Your Project(s) by Utilizing the Technical Assistance Program to Increase Access to IIJA Funding

*Speaker: Quay Schappell, Larson Design Group*

Want to get your project ready to ensure you maximize the opportunity to receive Infrastructure Investment and Jobs Act (IIJA) funding? Learn about the no-cost program to assist in preparing and submitting a complete funding application for eligible capital improvement projects.

## 9:10-9:40am – Don't Flush Your Savings:

### Cost Effective Energy Conservation for Your Plant

*Speakers: Ben Pressman, PE, Spotts, Stevens and McCoy; and Heather Cowley, PA DEP*

Explore cost-effective energy conservation opportunities common to many plants, increasing challenges of balancing water and air quality regulations with energy and climate concerns to minimize overall negative impacts, and insight from DEP on the department's sustainability goals and plans to assist municipalities in reaching their goals.

## 10:40-11:10am – Developing Projects with Complex Planning and Permitting Requirements; When It Makes Sense to Separate Projects to Meet Compliance Deadlines

*Speakers: Josiah D. Bair, PE and Elizabeth Cheeseman, both with GHD, Inc.*

What started out as an inflow and infiltration removal project to meet consent order compliance became a review of end-of-service-life of the force main, determination of future capacity of the trunk line, and evaluation of construction alternatives to reduce forested wetland impacts. The presentation will discuss associated planning, permitting, decisions, and impacts.

## 11:15-11:45am – Developing Projects with Complex Planning and Permitting Requirements; When It Makes Sense to Separate Projects to Meet Compliance Deadlines

*Speaker: Tesra Schlupp, PENNVEST*

PENNVEST funding options – traditional, new and innovative ways to fund projects as well as Federal Infrastructure Bill funding information. PENNVEST services the communities and citizens of Pennsylvania by funding sewer, storm water, non-point source and drinking water improvement projects. The primary focus of the presentation will be on PENNVEST funding opportunities.

## TUESDAY AFTERNOON

## 12:55-1:00pm – 5-Minute Vendor Presentations

Exhibiting vendors will be given the opportunity to make a 5-minute presentation about their products or services prior to each of the half-day Technical Programs. Topics will be announced in the On-Site Conference Program.

### COLLECTION SYSTEMS PROGRAM

#### Wet Weather Flows

*Moderators: Christopher Henry, Mott MacDonald; and Lucas Chapman, Flow Assessment Services*

## 1:00-1:30pm – Regional Combined Sewer Separation – Challenges & Lessons Learned

*Speaker: Stephanie Cuthbert, PE, CME, Remington & Vernick Engineers*

Combined Sewer Systems have established their respective Long Term Control Plans and the evaluation of alternatives to control combined sewer overflows. For three Combined System Owners, the regional separation of their systems is underway. The presentation will review lessons learned from a technical and construction perspective and government collaboration effort.

## 1:35-2:05pm – Storm Event Analysis for Active Control Structures

*Speaker: Philip Pickering, PE, Philadelphia Water Department*

Engineers at the Philadelphia Water Department analyze storm event data collected by remote sensors using spreadsheet templates as a powerful tool for monitoring the health of the collection system. Their focus is on active gate controls used to direct flows and minimize combined sewer overflows.

## 2:10-2:40pm – Hydraulic Modeling, Can It Be More than Steady State Snapshots?

*Speaker: Matt Crow, PE, Hazen and Sawyer*

This presentation will provide a defined approach to assessing the impacts of treatment facilities upgrades as well as wet-weather flow, utilizing calibrated dynamic hydraulic model. A series of PA case studies will be shared as practical application of this approach.

## 3:40-4:45pm – Collection Systems Quizzo

*Moderators: Jim Shelton, Arcadis; and Cheryl Paulin, ADS Environmental*

The Collection Systems Quizzo will feature multiple short presentations with fun quizzes to test your knowledge led by industry experts.

### ENGINEERING & CONSTRUCTION PROGRAM

#### Wastewater Process and Technology

*Moderators: Robert Dengler, Gannett Fleming; and Matt Chisnell, Capital Region Water*

## 1:00-1:30pm – A Comprehensive Approach to Utilizing Embedded Carbon Maximizes Bio-P and Aeration Efficiency

*Speaker: Tyler Kunz, PE, EnviroMix*

A demonstration at a 5.5 MGD water reclamation facility modified existing infrastructure to add an adaptive process reactor and inline fermentation using compressed gas mixing. This approach improves management of the carbon that enters the facility. Results will be shared demonstrating improved nutrient removal, chemical reduction and energy savings.



# Technical Program Details

## 1:35-2:05pm – Using Siphon to Reduce Cost and Simplify MBR Operations

*Speakers: Joel Kostelac, PE BCEE; and Thor Young, both with GHD*

Most membrane bioreactors (MBRs) use pumps to draw permeate through the membranes. However, with sufficient downstream head, a siphon or partial siphon can be used to draw permeate through the membranes by gravity, thus saving energy. This paper explores siphon design, operation, and multiple case studies to highlight its benefits.

## 2:10-2:40pm – Utilization and Practical Approach of Ammonia-Based Aeration Control (ABAC) at Bonnybrook Wastewater Treatment Plant, Canada

*Speaker: Danelle Bishoff, MASC, EIT, Stantec Consulting Ltd.*

Ammonia-based aeration control (ABAC) can provide energy savings with the aim of maintaining partial nitrification in the system. Two strategies for ABAC in a full-scale system and BioWin® were reviewed: feedforward-feedback based on (i) cascading DO setpoints dependent on ammonia load, and (ii) modified DO setpoints based on microbial kinetics.

## 3:40-4:10pm – Shining a Light on UV Disinfection Facility Design

*Speaker: Andrew D. Crew, Gannett Fleming*

Ultra-violet (UV) disinfection has gained popularity in wastewater treatment. Gannett Fleming recently designed a 60 MGD UV system for an existing facility. Design challenges included treating landfill leachate, providing back-up disinfection, reducing algal growth and maintaining residual dissolved oxygen. This presentation will discuss preliminary engineering through construction and lessons learned.

## 4:15-4:45pm – Wet Weather Compliance and ALCOSAN'S CSO Bypass and Disinfection Project

*Speakers: Joel Kostelac, PE BCEE, GHD; and Jeff Argyros, ALCOSAN*

As part of their ongoing wet weather compliance program, the Allegheny County Sanitary Authority (ALCOSAN) continues their major plant expansion and upgrade projects. This presentation focuses on the design of the project at the heart of the facility, which will provide primary effluent bypass and disinfection to nearly 300 mgd.

## INDUSTRIAL WASTE PRETREATMENT PROGRAM

*Moderators: Jenna Bishop and Dave Schlott, Jr., both with ARRO Consulting, Inc.*

## 1:00-1:30pm – Brewery Wastes and Impact on Wastewater

*Speaker: Natalie O'Connor, Entech Engineering, Inc.*

Microbreweries are popping up in communities across the state. These breweries can grow rapidly, increasing the wastes generated and the impact on wastewater. This session will present information on brewery wastes, opportunities for recycling in lieu of discharge with wastewater, and possibilities for reduction in organic loading with the wastewater discharged to a POTW.

## 1:35-2:05pm – Industrial User Inspections

*Speaker: H. David Miller, Entech Engineering, Inc.*

In accordance with the Industrial Pretreatment regulations, all Significant Industrial Users (SIUs) must be inspected at least annually. This session will cover the steps for conducting an inspection of an SIU, including Pre-Inspection Conference, Review of Records, Facility Walk-Through, Wastewater Sample Collection, Facility and Pretreatment System Photos, Employee Interviews, and Closing Conference.

## 2:10-2:40pm – A Sustainable Real-World Approach to Removing PFAS from Contaminated Water Sources

*Speaker: George Federico, Theia, LLC*

This presentation explores the application of dry media for treating PFAS contaminated water. We provide data and comparative performance of different medias as well as hurdles these different water sources present and the solutions to overcoming them. We touch on exciting new destruction technologies for dealing with spent treatment media.

## 3:40-4:10pm – Reducing Bakery Wastewater FOG - A Case Study

*Speakers: Kara Humes and Dale Miller, both with Entech Engineering, Inc.*

Large commercial bakeries can be a significant source of fats, oils and grease (FOG). This session will include a case study of a sweet goods manufacturing industry and the method used to reduce FOG and total suspended solids in the wastewater effluent discharged to a POTW.

## 4:15-4:45pm – Wastewater: A Reflection of Society – The Impact of PFAS on Water Reclamation Facilities

*Speaker: Jane Madden, PE, BCEE, CDM Smith*

PFAS fast are becoming part of the vernacular of water/wastewater utilities, and their impact on the cost to operate can be astounding. Research to date on the occurrence and fate and transport of PFAS through WRRFs, current regulations, and means to help Pennsylvania prepare for future regulations will be presented.

## PRIVATIZATION PROGRAM

*Moderator: Autumn Crawford, Western Butler County Authority*

## 1:00-1:30pm – Best Practices of Effectively Managed Utilities – Private and Public

*Speaker: Michael Kyle, Lancaster Area Sewer Authority*

The presenter will discuss how to implement and maintain asset management for proactive success. An update on SB 597 will be included.

## 1:35-2:05pm – Effective Educating – Stakeholder and Community Outreach

*Speaker: Jason Dailey, Dailey Operation Consulting LLC*

The presenter will discuss effective communication and education of stakeholders, key decision makers, and the community on privatization.

## 2:10-2:40pm – Why We Offer Privatization: A Brief Talk from Aqua PA

*Speaker: Todd Duerr, Aqua PA*

The passage in 2016 of Act 12 allowed water and wastewater utilities to offer their assets for sale at fair market value. Several utilities in Pennsylvania have sold their systems to Aqua PA. This presentation will offer insight from Aqua PA.

## 3:40-4:10pm – Downingtown Area Regional Authority – Alternatives to Privatization

*Speaker: Herbert Mays, Downingtown Area Regional Authority*

Downingtown Area Regional Authority (DARA) has practiced a hybrid of public/private since the late 1980s. The presenter will discuss the benefits, including being able to maintain ownership of assets.

## 4:15-4:45pm – Financial Solvency for Authorities Before and During Privatization

*Speakers: Adrienne Vicari and Bruce Hulshizer, both with Herbert, Rowland & Grubic, Inc.*

Strategies for financial solvency whether privatization is on the table or not will be discussed.

# Technical Program Details

## PROFESSIONAL OPERATORS PROGRAM

Moderator: Dennis Duryea, Kiski Valley Water Pollution Control Authority

### 1:00-1:30pm – The First Full-Scale Sidestream Treatment on the West Coast using the Microvi MNE Nitrogen Removal Technology

Speaker: Ali Dorri, Microvi

Sidestream treatment is an attractive mechanism for managing nutrient discharge loads. Oro Loma Sanitary District implemented Microvi's MNE technology to manage nutrients from their 20 MGD facility in the San Francisco Bay Area. This presentation details the results of the first years' operation of the MNE technology at Oro Loma.

### 1:35-2:05pm – Polymer/Flocculant 101 – Fundamentals of Thickening and Dewatering

Speaker: Yong Kim, PhD, UGSI Solutions, Inc.

This presentation illustrates how to optimize polymer performance by understanding many factors that affect the quality of polymer solution such as polymer chemistry, handling, water, mixing profile, and aging. Laboratory testing and field evaluations at municipal wastewater treatment plants confirmed that well-designed polymer systems could improve dewatering process significantly.

### 2:10-2:40pm – Case Studies of True Batch Sequencing Batch Reactor Systems Designed for Nutrient Removal

Speaker: Manuel de los Santos, Aqua-Aerobic Systems, Inc.

This presentation will cover the true batch version of the SBR Technology and highlight operation of several plants in Pennsylvania and surrounding states. An SBR system operates in a time management approach allowing for modifications to the environment to meet stringent effluent, including total nitrogen and total phosphorus.

### 3:40-4:10pm – S2EBPR Operation at the Upper Montgomery Joint Authority WRRF Achieves Consistent, Reliable and Cost-Effective Phosphorus Removal

Speakers: Paul Dombrowski, PE, BCEE, F.WEF, and Anthony Elberti, both with Woodard & Curran; and Jason DiPietro, Upper Montgomery Joint Authority

The Upper Montgomery Joint Authority completed a significant upgrade of their trickling filter/solid contact process to full biological nutrient removal activated sludge in 2019. The presentation will describe the project and focus on startup and operation of the facility, especially the sidestream enhanced biological phosphorus removal (S2EBPR) system that has proven very effective at removing phosphorus.

### 4:15-4:45pm – Zero2Waste® Gravity Filter Systems – Water...Every Drop Counts!

Speaker: Mark Romers, ITAC

This presentation showcases the results and conclusions for a backwash optimization pilot study at a large gravity filter water plant in the Atlanta Georgia area and a large water plant in south Texas whose water source is the Rio Grande River where they reduced their backwash water consumption substantially.

## STUDENT RESEARCH PROGRAM & POSTER CONTEST

Moderator: Holly Frederick, Wilkes University

### 1:00-4:45pm

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 Commonwealth and selects the top five 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 three poster presenters in both undergraduate and graduate categories will receive the Student Research Poster Award. All posters will be available for viewing by conference attendees, and awards will be presented during the Research Program.

## WEDNESDAY MORNING

### 7:55-8:00am – 5-Minute Vendor Presentations

Exhibiting vendors will be given the opportunity to make a 5-minute presentation about their products or services prior to each of the half-day Technical Programs. Topics will be announced in the On-Site Conference Program.

## ENGINEERING & CONSTRUCTION PROGRAM

### WWTP Process and Solids Handling

Moderators: Robert Dengler, Gannett Fleming; and Qian Zhang, GHD

### 8:00-8:30am – Troubleshooting Start-Up of Dewatering Screw Presses

Speakers: Jeffrey Harman, EIT, and Logan Jury, both with Herbert, Rowland & Grubic, Inc.

See a highly successful approach to troubleshooting dewatering system start-ups based on several case studies. Content applies to all dewatering systems, but emphasizes screw presses, a technology for which system-wide troubleshooting guidance isn't readily available. Topics will include polymer make-down and quality control, solids conditioning, and screw press performance optimization.

### 8:35-9:05am – Polymer Treatment Applications - 5 Key Design Elements that Should Be Considered During the Course of the Design Selection through Project Delivery

Speakers: Edward Spayd, PE, and Logan Jury, both with Herbert, Rowland & Grubic, Inc.

Polymer addition costs can make up a large fraction of the operating budget for treatment facilities. To avoid polymer overuse and minimize costs, utilities must carefully select their polymer and properly coordinate design. Learn how to ensure successful start-up and operation of polymer treatment applications in this presentation.

### 9:10-9:40am – Cold Temperature Nitrification of Lagoon Wastewater Using a Biologically Active Filter (BAF), Seven Years of Operation

Speaker: Philip Pedros, PhD, PE, Mott MacDonald

This presentation will describe the use of a biological active filter (BAF) for cold temperature nitrification at a lagoon. The theory of the process and performance data from the last 7 years of operation in Waverly Township, PA will be presented.



# Technical Program Details

## 10:10-10:40am – Optimizing the Feed to the GHJSA's Fluidized Bed Sewage Sludge Incinerator

*Speaker: Nicholas Sahd, Gannett Fleming, Inc.*

Greater Hazleton Joint Sewer Authority's 15 dry ton/day Fluidized Bed Sewage Sludge Incinerator became operational in June 2020. Gannett Fleming will present an overview of the new incinerator process and detail how fats, oils, and grease in the solids feed resulted in cost savings and limited supplemental fuel need.

## 10:45-11:15am – First North American Installation of an Adaptive Clarifier Inlet

*Speaker: Mario Benisch, PE, GHD*

The adaptive clarifier inlet promises optimal (adaptive) hydraulics and blanket filtration to produce filter effluent quality and add capacity. The first US installation (Norfolk, VA) met that promise with an average effluent turbidity < 2 ntu and an estimated capacity gain of 30%.

### PFAS PROGRAM

*Moderators: Elizabeth Cheeseman, GHD; and  
Linda Leopold, Pittsburgh Water & Sewer Authority*

## 8:00-8:30am – PFAS in Wastewater: Promising Management and Treatment Strategies

*Speaker: Jay R. Surti, PE, GHD, Inc.*

Using case studies, this presentation will provide regulatory updates, steps wastewater utilities can take to evaluate and mitigate PFAS risks through promising management strategies such as source control, adaptive planning, implementing treatment (separation and destruction) to address PFAS challenges, and disposal approaches for PFAS laden treatment media.

## 8:35-9:05am – Lessons Learned in Five Years of Operating PFAS Treatment Facilities

*Speaker: Theresa Funk, PE, Gilmore & Associates, Inc.*

What happens after startup? There are operational challenges with any new treatment facility, but those associated with treatment of a new or emerging contaminant can be unique. This presentation highlights the potential water quality, capacity, cost, and regulatory compliance challenges experienced by one Southeastern PA water provider.

## 9:10-9:40am – Technical and Legal Challenges for Addressing PFAS in Municipal Water Treatment Systems

*Speaker: Brian J. Yates, PE, Burgess & Niple, Inc.*

This presentation will cover the technical and legal challenges for addressing PFAS in municipal water treatment systems. These challenges include removal of PFAS in source waters and wastewater influent including technologies for removal of PFAS. Legal challenges include lawsuits related to upstream sources of PFAS and discharge of PFAS.

## 10:10-11:15am – Sampling and Analysis for PFAS

*Speaker: Sara Kuzma-Stump, Suburban Testing Labs, Inc.*

PFAS regulations affecting our public water suppliers and wastewater treatment plants are emerging. Sampling is complicated, and information about analysis is not yet widely understood. This presentation will cover what PFAS is, what the emerging lab testing requirements are, and sampling procedures.

# 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, **seven workshops have been approved by the PA DEP for additional credit.** Go to pages 20-21 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.

# 2023 Workshop Details

The following workshops are being offered during PennTec 2023 on June 18-21 at the Hershey Lodge & Convention Center in Hershey, PA. You may add these courses to your PennTec registration, or you may register for 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

This course is PA DEP approved for **16.0 wastewater contact hours**. Course ID 3884.

You must attend both days to earn DEP credit. Partial credit will not be awarded.

*Instructors: Jeremy Miller, PA DEP; and 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.

## Monday, 8:45am-4:00pm

### A Laboratory Practices Committee Workshop

#### Laboratory Supervisor Training

This course is PA DEP approved for **6.0 drinking water & wastewater contact hours**. Course ID 6759.

*Instructor: Larissa Hoover, Cranberry Township*

Students will learn common lab terms, the role and expectations of a lab supervisor, current Chapter 252 regulations, and typical calculations used to evaluate lab data. The class will be presented in five sections: background information and general provisions; general standards; QA/QC requirements; proficiency study, onsite assessment requirements and miscellaneous provisions; and basic math. Students will apply what they learn during discussion and question/answer sessions; and they will complete a math worksheet to demonstrate their understanding of the math section of the presentation. This course may help students prepare to take the laboratory supervisor test.

## Monday, 12:45pm-4:45pm

### A Training Committee Workshop

#### Responsibilities of Clean Water Professionals

This course is PA DEP approved for **3.5 wastewater contact hours**. Course ID 7122.

*Instructors: Tom Brown, Marc Neville, and Anita Stabile, all with PA DEP*

This course will include an introduction to the Wastewater Operator Code of Ethics. Upon conclusion of the course, students will be able to describe the importance of good communication and establish a communication system with system owners, customers and regulatory agencies. And they will 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; Laws, Rules and Regulations that Impact Wastewater Operators; Security and Emergency Planning for Wastewater Systems; and Educating Owners, Customer and the Public.

## Tuesday, 8:00am-12:30pm

### A Training Committee Workshop

#### Common Pump Station Electrical Issues

This course is PA DEP approved for **3.0 drinking water & wastewater contact hours**. Course ID 8421.

*Instructors: Josh Price and Roger Stauffer, both with Envirep*

Wastewater and Water Treatment managers and operators deal with numerous electrically driven processes at treatment plants and outlying sewage pump stations and water booster pump stations. These processes utilize equipment that is controlled and powered from electrical control panels and various electrical components. Most operations personnel are not electrical engineers but they still have to maintain, troubleshoot and identify problems associated with the electrical equipment. This course will give an in-depth overview of why electrical problems occur, common terminology, discussions of motors, control panels, components, design considerations, startup, troubleshooting, failure analysis, and prevention.

## Tuesday, 8:00am-4:45pm

### A Training Committee Workshop

#### Nutrient Workshop

This course is PA DEP approved for **6.5 wastewater contact hours**. Course ID 9149.

*Instructor: Christine Volkay-Hilditch, City of Lancaster*

The purpose of this course is to prepare students for the wastewater operator certification exam and as a review for students who are already operators. There is a significant need for operators who understand nutrient removal and how to do the process control testing required to operate a plant properly. Course content will include: Nitrogen & Phosphorus in Wastewater; Chemistry Review; Biological Nitrification; Biological Denitrification; Process Variables; Nitrogen Removal Review; Chemical Precipitation of Phosphorus; and Enhanced Biological Phosphorus Removal.

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

### A Safety Committee Workshop

#### Introduction Locator Program

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.

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

### A Biosolids Committee Workshop

#### Solids Handling & Disposal

This course is PA DEP approved for **3.5 wastewater contact hours**. Course ID 9165

*Instructor: Charles Winslow, 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.



# 2023 Workshop Registration Form

**PLEASE PRINT**

Registrant Name: \_\_\_\_\_ Nickname (for badge): \_\_\_\_\_  
 Organization: \_\_\_\_\_  
 Mailing Address: \_\_\_\_\_  
 City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
 Phone: \_\_\_\_\_ Mobile Phone: \_\_\_\_\_  
 Email Address: \_\_\_\_\_  
 PWEA Member #: \_\_\_\_\_ PA DEP Client ID #: \_\_\_\_\_ PE License #: \_\_\_\_\_

**Community Service Project** (Sunday, 11am-3pm): ☐ I want to volunteer! Send me more info when it is available.

WORKSHOP FEES INCLUDE 3-RING BINDERS AND/OR HANDOUTS.	DISCOUNT WITH FULL PENNTEC REGISTRATION*	FEE FOR WORKSHOP ONLY** BY MAY 26	ONSITE
<b>Monday &amp; Tuesday, 8:00am-5:00pm</b> <b>Activated Sludge Refresher Course</b> – Course ID 3884 PA DEP approved for <b>16.0 wastewater contact hours</b>	<input type="checkbox"/> \$25	PWEA Member <input type="checkbox"/> \$270 Non-Member <input type="checkbox"/> \$345	<input type="checkbox"/> \$320 <input type="checkbox"/> \$395
<b>Monday, 8:45am-4:00pm – Lab Practices Committee Workshop</b> <b>Laboratory Supervisor Training</b> – Course ID 6759 PA DEP approved for <b>6.0 drinking water &amp; wastewater contact hours</b>	<input type="checkbox"/> \$25	PWEA Member <input type="checkbox"/> \$150 Non-Member <input type="checkbox"/> \$225	<input type="checkbox"/> \$200 <input type="checkbox"/> \$275
<b>Monday, 12:45-4:45pm</b> <b>Responsibilities of Clean Water Professionals</b> – Course ID 7122 PA DEP approved for <b>3.5 wastewater contact hours</b>	<input type="checkbox"/> \$25	PWEA Member <input type="checkbox"/> \$90 Non-Member <input type="checkbox"/> \$165	<input type="checkbox"/> \$140 <input type="checkbox"/> \$215
<b>Tuesday, 8:00am-12:30pm</b> <b>Common Pump Station Electrical Issues</b> – Course ID 8421 PA DEP approved for <b>3.0 drinking water &amp; wastewater contact hours</b>	<input type="checkbox"/> \$25	PWEA Member <input type="checkbox"/> \$75 Non-Member <input type="checkbox"/> \$150	<input type="checkbox"/> \$125 <input type="checkbox"/> \$200
<b>Tuesday, 8:00am-4:45pm – Training Committee Workshop</b> <b>Nutrient Workshop</b> – Course ID 9149 PA DEP approved for <b>6.5 wastewater contact hours</b>	<input type="checkbox"/> \$25	PWEA Member <input type="checkbox"/> \$160 Non-Member <input type="checkbox"/> \$235	<input type="checkbox"/> \$210 <input type="checkbox"/> \$285
<b>Wednesday, 8:00-11:30am – Safety Committee Workshop</b> <b>Introduction Locator Program</b> – Course ID 579 PA DEP approved for <b>3.0 drinking water &amp; wastewater contact hours</b>	<input type="checkbox"/> \$25	PWEA Member <input type="checkbox"/> \$75 Non-Member <input type="checkbox"/> \$150	<input type="checkbox"/> \$125 <input type="checkbox"/> \$200
<b>Wednesday, 8:00-11:45am – Biosolids Committee Workshop</b> <b>Solids Handling &amp; Disposal</b> – Course ID 9165 PA DEP approved for <b>3.5 wastewater contact hours</b>	<input type="checkbox"/> \$25	PWEA Member <input type="checkbox"/> \$90 Non-Member <input type="checkbox"/> \$165	<input type="checkbox"/> \$140 <input type="checkbox"/> \$215

\* To qualify for discounted workshop registration with your full PennTec registration, attach this form to the completed Conference Registration Form found on page 23.

\*\* You may only register at the Workshop Only fee for one day of the Conference. If you wish to attend workshops on multiple days, you will need to pay for a Full Conference Registration and add workshops at the discounted fee.

## Method of Payment:

- ☐ **Check** (payable to PWEA) – Due within 10 business days of form submission. Total Due \$ \_\_\_\_\_
- ☐ **Credit Card payments must be made online**  
 After we receive this form, you will be sent a confirmation email. There will be a link at the bottom of that email which will take you to the online payment screen for credit card payments. All credit card transactions will include a 3.5% "technology fee."

## Cancellation/Substitution Policy

No refunds granted after May 12th. A \$50 cancellation fee will be assessed on all refund requests received by May 12th. All refunds must be requested in writing. Substitutions are permitted with a \$25 per person substitution fee. Substitutions may be made until May 26th and must be made in writing, accompanied by a new registration form.

Send completed registration form and full payment to:

PWEA • PO Box 61 • Blossburg, PA 16912  
 Fax: 570-549-2221 • Phone: 570-549-2204  
 Email: cindyrock@pwea.org



## Not a member of PWEA?

Go to [www.pwea.org](http://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](mailto:pwea@pwea.org).

## PA DEP Operator Certification Exams

The Pennsylvania Water Environment Association (PWEA) is offering PA DEP Operator Certification Exams on different dates and locations in 2023. Register for your exam(s) through PWEA's online registration system at [www.pwea.org](http://www.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-1:00pm:**

Wednesday, April 12, 2023 – DEP Williamsport Office – **Sold Out**

Wednesday, April 19, 2023 – DEP Pittsburgh Office – **Sold Out**

Wednesday, June 7, 2023 – DEP Pittsburgh Office – Computer-based Exam

Wednesday, June 21, 2023 – Hershey Lodge & Convention Center in Hershey – Paper-based Exam

Wednesday, June 28, 2023 – DEP Williamsport Office – Computer-based Exam

Thursday, June 29, 2023 – DEP Wilkes-Barre Office – Computer-based Exam

Tuesday, August 15, 2023 – DEP Pittsburgh Office – Computer-based Exam

Thursday, August 17, 2023 – DEP Wilkes-Barre Office – Computer-based Exam

Tuesday, September 19, 2023 – Berks County Fire Training Center in Reading – Paper-based Exam

Tuesday, November 14, 2023 – Lehigh Valley Hotel & Conference Center – Paper-based Exam

Questions about certification exams should be directed to: [sboynton@pwea.org](mailto:sboynton@pwea.org).

## Want to Get More Involved Professionally Outside of Your Work Environment?



The PWEA invites you to contribute your expertise and a small portion of your time to PWEA committee activities.

If you would like to participate in any of the committees, visit [www.pwea.org/pwea\\_committees.php](http://www.pwea.org/pwea_committees.php) and click on the link to download the form with the list of committees available.

### Ever considered serving on a PWEA committee?

#### What serving on a committee is...

- Stepping outside our comfort zone
- Sharing your talents and expertise
- Working as part of a team
- Networking and learning from others
- Boosting your career
- Discovering new skills and new interests
- Gaining knowledge of the organization and its inner workings
- Serving members and contributing to the advancement of the Association and its goals

#### What serving on a committee isn't...

- Always being in the spotlight
- Having to go it alone
- Always having to be physically present – technology affords the opportunity to be virtually present when in-person meetings just aren't possible



# 2023 Conference Registration Form

**PLEASE PRINT**

Registrant Name: \_\_\_\_\_ Nickname (for badge): \_\_\_\_\_

Organization: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Phone: \_\_\_\_\_ Mobile Phone: \_\_\_\_\_

Email Address: \_\_\_\_\_

PWEA Member #: \_\_\_\_\_ PA DEP Client ID #: \_\_\_\_\_ PE License #: \_\_\_\_\_

- ☐ Check here if you are a Young Professional. (Age 35 or younger; Driver's License ID required.)
- ☐ **College Students** – Registration fee is waived for full-time college students if this form is submitted with a photocopy of current student identification. Social events and workshops are not included.

**Spouse/Life Partner Registration** – A spouse or life partner who **is not in the water or wastewater industry** may register at no charge with each paid FULL Conference Registration. This registration type does not include training sessions, workshops, or ticketed events.

Full Name: \_\_\_\_\_ Nickname (for badge): \_\_\_\_\_

**Community Service Project** (Sunday, 11am-3pm): ☐ I want to volunteer! Send me more info when it is available.

**CONFERENCE REGISTRATION** (Check appropriate fee.)  
Includes technical sessions, continental breakfast, lunch, receptions and access to the Exhibit Hall.

	Early Bird (Save \$50) By March 31	April 1-May 26	After May 26
<b>Full Conference</b>			
PWEA Member	<input type="checkbox"/> \$515	<input type="checkbox"/> \$565	<input type="checkbox"/> \$615
Non-Member	<input type="checkbox"/> \$625	<input type="checkbox"/> \$675	<input type="checkbox"/> \$725
<b>Monday Only</b>			
PWEA Member	<input type="checkbox"/> \$285	<input type="checkbox"/> \$335	<input type="checkbox"/> \$385
Non-Member	<input type="checkbox"/> \$350	<input type="checkbox"/> \$400	<input type="checkbox"/> \$450
<b>Tuesday Only</b>			
PWEA Member	<input type="checkbox"/> \$285	<input type="checkbox"/> \$335	<input type="checkbox"/> \$385
Non-Member	<input type="checkbox"/> \$350	<input type="checkbox"/> \$400	<input type="checkbox"/> \$450
<b>Monday Only Young Professional Registration</b>			
PWEA Member	<input type="checkbox"/> \$190	<input type="checkbox"/> \$240	<input type="checkbox"/> \$290
Non-Member	<input type="checkbox"/> \$255	<input type="checkbox"/> \$305	<input type="checkbox"/> \$355
<b>Discount Ticket with SYP Registration – check if you will attend:</b>			
<input type="checkbox"/> PO & SYP Plant Tour - \$20			
<b>Tuesday Only Young Professional Registration</b>			
PWEA Member	<input type="checkbox"/> \$190	<input type="checkbox"/> \$240	<input type="checkbox"/> \$290
Non-Member	<input type="checkbox"/> \$255	<input type="checkbox"/> \$305	<input type="checkbox"/> \$355
<b>Discount Ticket with SYP Registration – check if you will attend:</b>			
<input type="checkbox"/> Stormwater Field Trip - \$20			

## NETWORKING EVENTS

(Indicate all events you plan to attend.)

	Quantity	Cost	Total Due
<b>Sunday- Wednesday, 8:30am</b>			
Golf Tournament			
Single Golfer	_____	\$110 per person	\$_____
Foursome discount *	_____	\$400 per foursome	\$_____
<b>Monday</b>			
PO & SYP Plant Tour	_____	\$35 per person	\$_____
President's Reception	_____	no charge	\$0
Awards Reception	_____	no charge	\$0
Tailgate Dinner & Cornhole Tournament	_____	\$55 per person	\$_____
<b>Tuesday</b>			
Stormwater Tour	_____	\$35 per person	\$_____
Women in Water Luncheon	_____	no charge	\$0
Beer & Pretzels Reception	_____	no charge	\$0
* To qualify for the foursome discount, full payment must accompany this form. Provide names, if known.			
1. _____	3. _____		
2. _____	4. _____		

## Method of Payment

To qualify for the early registration discount, payment must be postmarked by March 31st. Total Registration Fees: \$ \_\_\_\_\_

☐ **Check** (payable to PWEA) – Due within 10 business days of form submission.

Total Ticketed Events Fees: \$ \_\_\_\_\_

☐ **Credit Card payments must be made online**

**Total Due:** \$ \_\_\_\_\_

After we receive this form, you will be sent a confirmation email. There will be a link at the bottom of that email which will take you to the online payment screen for credit card payments. All credit card transactions will include a 3.5% "technology fee."

## Cancellation/Substitution Policy

No refunds granted after May 12th. A \$50 cancellation fee will be assessed on all refund requests received by May 12th. All refunds must be requested in writing. Substitutions are permitted with a \$25 per person substitution fee. Substitutions may be made until May 26th and must be made in writing, accompanied by a new registration form.

Send completed registration form and full payment to:

PWEA • PO Box 61 • Blossburg, PA 16912  
Fax: 570-549-2221 • Phone: 570-549-2204  
Email: cindyrock@pwea.org



## Mark Your Calendar

**June 18-21, 2023**

**Hershey Lodge & Convention Center in Hershey, PA**

Professional development is the main purpose of the PennTec Conference with high quality, scientifically-based technical presentations. The Conference provides learning, discussion and interaction with other water quality professionals and vendors. Continuing education credits are available for operators, engineers and other water quality professionals.

Attending sessions, visiting with the exhibitors and networking with your colleagues will help you: find solutions to current problems; discover new and innovative technologies; learn about the latest products and equipment; and make important contacts for the future.

We hope to see you at this year's PennTec Conference in Hershey.