

PennTec 2024 REGISTRATION PROGRAM

June 16-19, 2024 | Penn Stater Conference Center Hotel
State College, PA

Conference at a Glance

(as of January 31, 2024)

Visit www.pwea.org for the most current program schedule.



SUNDAY, JUNE 16

11:00am-3:00pm	Community Service Project
4:00pm-5:00pm	Registration Opens
6:00pm-7:30pm	Vendor Get-Together at Legends Sports Bar https://thepennstaterhotel.com/legends-restaurant with Exhibits & Sponsors Committee

MONDAY, JUNE 17

7:00am-5:00pm	Registration Opens
7:00am-8:00am	Continental Breakfast in Hallway
7:30am-8:30am	Keynote Presentation
8:40am-12:00pm	Morning Technical Programs <ul style="list-style-type: none">• <i>Biosolids</i>• <i>Collection Systems</i>• <i>Engineering & Construction</i>• <i>Stormwater</i>• <i>Utility Management & Government Affairs</i> Workshops <ul style="list-style-type: none">• <i>Activated Sludge Refresher – Day 1 of 2</i>• <i>Back to Basics – Water Quality Monitoring Course</i>
8:00am-5:00pm	
8:45am-12:00pm	
9:45am-10:15am	Exhibit Hall Open with Break Refreshments
12:00pm-1:00pm	Exhibit Hall Open with Complimentary Lunch
12:30pm-1:00pm	PWEA Annual Business Meeting with Dessert & Coffee
12:55pm-1:00pm	5-Minute Vendor Presentations
1:00pm-3:30pm	Professional Operators (PO) Plant Tour
1:00pm-4:45pm	Afternoon Technical Programs <ul style="list-style-type: none">• <i>Biosolids</i>• <i>Collection Systems</i>• <i>Engineering & Construction</i>• <i>Stormwater</i>• <i>Utility Management & Government Affairs</i>
2:40pm-3:40pm	Exhibit Hall Open with Break Refreshments
3:40pm-4:45pm	Collection Systems Mobile Sessions in Exhibit Hall
4:45pm-5:45pm	President's Reception in Exhibit Hall
5:45pm-7:00pm	Annual PWEA Awards Ceremony Reception
7:15pm-9:30pm	Tailgate Dinner and Cornhole Tournament

TUESDAY, JUNE 18

7:00am-5:00pm	Registration Opens
7:30am-8:30am	Exhibit Hall Open with Continental Breakfast
7:55am-8:00am	5-Minute Vendor Presentations
8:00am-11:45am	Morning Technical Programs <ul style="list-style-type: none">• <i>Collection Systems</i>• <i>Engineering & Construction</i>• <i>Industrial Waste Pretreatment</i>• <i>Privatization</i>• <i>Professional Operators</i> Workshops <ul style="list-style-type: none">• <i>Wastewater Treatment Biological Processes</i>• <i>Activated Sludge Refresher – Day 2 of 2</i>
8:00am-11:30am	
8:00am-5:00pm	
9:40am-10:40am	Exhibit Hall Open with Break Refreshments
11:15am-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
12:55pm-1:00pm	5-Minute Vendor Presentations
1:00pm-4:45pm	Afternoon Technical Programs <ul style="list-style-type: none">• <i>Collection Systems</i>• <i>Engineering & Construction</i>• <i>Industrial Waste Pretreatment</i>• <i>Privatization</i>• <i>Professional Operators</i>• <i>Drinking Water</i>
2:40pm-3:40pm	Exhibit Hall Open with Break Refreshments
4:45pm-5:45pm	Beer & Pretzels Reception in Exhibit Hall
4:45pm-5:45pm	Operator Olympics in Exhibit Hall

WEDNESDAY, JUNE 19

7:00am-8:30am	Continental Breakfast in Hallway
7:00am-12:00pm	Registration Open
7:55am-8:00am	5-Minute Vendor Presentations
8:00am-11:15am	Morning Technical Programs <ul style="list-style-type: none">• <i>Engineering & Construction</i>• <i>Safety</i> Workshops <ul style="list-style-type: none">• <i>Biosolids Workshop – Solids Handling/Disposal</i>• <i>Introduction Locator Program</i>
8:00am-11:30am	
8:00am-11:30am	
8:30am	Annual Golf Tournament Penn State Golf Course, White Course
9:00am-1:00pm	PA DEP Water/Wastewater Operator Certification Exam
9:40am-10:10am	Break Refreshments in Hallway
11:30am	Conference Concludes

A Message from the PWEA Leadership

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

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

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

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

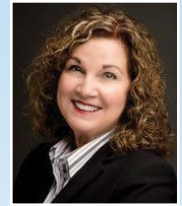
On Monday, the Professional Operators Committee will host a **Plant Tour**. Also on Monday is the **President's Reception**; the **Annual PWEA Awards Ceremony & Reception**; and the **Tailgate Dinner & Cornhole Tournament**.

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

We believe the PennTec Conference will provide everything you need under one roof – education, vendor contacts, and networking. We look forward to seeing you there!



William LaPorte
Chair, PennTec 2024
Conference Committee



Linda Leopold
PWEA President



Jeff Cantwell
Chair, PennTec 2024
Program Committee



Robert W. Dengler II
Co-Chair, PennTec 2024
Program Committee

Keynote Presentation

Hand Over Fist: Overcoming the Five Main Challenges to Change



George Hawkins arrived as the General Manager of the District of Columbia Water and Sewer Authority in 2009 in the middle of a crisis. The utility was voted the worst customer service agency in Washington, DC at the same the American Society of Civil Engineers rated water and wastewater both D-, the lowest grade given. George panicked when he realized the five central obstacles to change – which are common to any public infrastructure. George will describe how he

and his team were able to overcome each obstacle, becoming one of the most innovative and highly respected water utilities in the country. He will highlight universal principles that can guide any transformative change, learned from almost unbelievable stories from the frontlines of public service in the nation's capital. George will also add commentary on the selection of his non-profit Moonshot Missions as a National Environmental Finance Center and his observations about how to structure effective technical assistance to help disadvantaged communities access federal and state funding.

Table of Contents

Annual Business Meeting.....	7	Hotel Accommodations.....	9
Certification.....	20	PWEA Information.....	3
Conference at a Glance.....	2	Special Events.....	6
Conference Registration Pricing.....	23	Technical Program Details.....	11
Exhibit Hall Information.....	5	What's Included with Your Registration.....	4
General Information.....	4	Workshop Details.....	21

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.

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, 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 Plant Tour on Monday. 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 31. A \$50 cancellation fee will be assessed on all refund requests received by May 31. All refunds must be requested in writing. Substitutions are permitted with a \$25 per person substitution fee. Substitutions may be made until May 31 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 Plant Tour	Monday Tailgate Dinner	Tuesday Exhibit Hall; Continental Breakfast; Breaks; Lunch; Women's Summit; Reception	Wednesday Continental Breakfast; Break
Full Conference	Yes	Discounted	Yes	No	No	Yes	Yes
Monday only	Yes	No	Yes	No	No	No	No
Monday only, YPs	Yes	No	Yes	Discounted	No	No	No
Tuesday only	Yes	No	No	No	No	Yes	No
Tuesday only, YPs	Yes	No	No	No	No	Yes	No
Spouse Life Partner Registration	No	No	Yes	No	No	Yes	Yes

Early Registration Discount

Register online by April 19th and save \$50 on your Conference registration fee. In order to qualify if paying by check, payment must be postmarked by April 19th. (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 the 2nd Annual Car Racing event!

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



Special Events

Penn State's Sustainability Experience Center

Sunday, 11:00am-3:00pm

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

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

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

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

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

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



Annual PWEA Golf Tournament

Wednesday, 8:30am Shotgun Start

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

Cost is \$120 per person (or \$450 per foursome), and includes greens fee, golf cart, lunch and refreshments. You must register by May31st; 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.)



Special Events

Vendor Get-Together

Sunday, 6:00-7:30pm

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



PWEA Annual Business Meeting

Monday, 12:30-1:00pm

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

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



Plant Tour

Hosted by the Professional Operators Committee
Altoona Water Authority Westerly Treatment Facility
Monday, 1:00-3:30pm

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

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

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



Major Treatment improvements include:

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

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

Special Events

PWEA Annual Awards Ceremony & Reception

Monday, 5:45-7:00pm

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

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



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.



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.



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.



Special Events

Operator Olympics

Tuesday, 4:45-5:45pm

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

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

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

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



Back by popular demand is the PWEA Biosolids Beauty Contest!

The Exhibitor & Sponsor's and Biosolids Committees are once again hosting this fun contest at the 2024 PennTec Conference. Please be sure to stop by the designated Booth (location to be announced) in order to view the submissions and to see how creative our Biosolids Professionals can be! The winner will be announced during the lunch

break on Tuesday, June 18. Who will be crowned winner of the PWEA 2024 Biosolids Beauty Contest?

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

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

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

To enter the contest, please register online at pwea.org under the 2024 PennTec Conference Page | Bio Solids Beauty Contest.

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



Hotel Accommodations

Penn Stater Conference Center Hotel • 215 Innovation Blvd • State College, PA 16803

A block of rooms has been reserved at the Penn Stater for PennTec 2024. Reservations must be made by May 16, 2024. Rooms may not be available after this date. The discounted room rate is as follows:

\$132.00 per Room/Single or Double Occupancy

This rate includes overnight accommodations only. All rooms are non-smoking. Call Reservations at 1-800-233-7505 and mention Reservation ID PWEA24A to receive the discounted rate.

Online reservations can be made by going to <https://thepennstaterhotel.psu.edu>.



PWEA PennTec 2024 Biosolids Beauty Contest Form

WWTP INFORMATION

Plant Name: _____

Plant Address: _____

Type/Class of Biosolids: _____ Plant Average Flow (MGD): _____

Email: _____

CONTACT INFO

First Name: _____

Last Name: _____

Cell Phone: _____ Work Phone: _____

Email: _____

Please submit your completed Biosolids Beauty Contest entry form to Christopher Boyd,
on or before June 7, 2024 via email at chrisb@chartermachine.com, or via mail at:

Christopher Boyd
Director of Sales
Charter Machine Co
55 Wester Avenue
Metuchen, NJ 08840

Please contact Chris via email or phone (732-425-7489) with any questions. No entries will be accepted after June 7. All displays must be turned in at the Booth (location to be announced), on or before 9 am on Monday June 17, 2024; and must be complete and ready for viewing upon delivery. Contestants will not be permitted to make any changes and/or modifications to their displays once they are turned in.

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

Technical Program Details

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

MONDAY MORNING

BIOSOLIDS PROGRAM

Emerging Challenges & Resiliency

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

8:40am-9:10am

Solids Management Optimization through Design and Operation

Speaker: Rudy Kilian, PE, Carollo Engineers, Inc.

Solids processing represents a significant portion of the capital and operating costs of wastewater treatment. The presentation will present design features and operating strategies to reduce the costs of biosolids processing and disposal.

9:15am-9:45am

Evaluation of Innovative Biosolids Management in the Circular Water Economy (WRF #5169)

Speaker: Asa Lewis, PhD, Hazen & Sawyer

In response to rising challenges of contaminants of emerging concerns, greenhouse gas emissions, and limited land availability, many innovative biosolids management alternatives have emerged, providing utilities with new treatment perspectives. A holistic evaluation framework was developed to evaluate the potential of innovative biosolids management alternatives in addressing emerging challenges.

10:20am-10:50am

Nation Wide Assessment of Cost Impacts to the Clean Water Agencies Triggered by PFAS

Speaker: Pooja Sinha, Stantec Consulting Services Inc.

Wastewater utilities are a collection point for per- and polyfluoroalkyl substances (PFAS). Significant programmatic and capital infrastructure investments will be required to comply with existing and anticipated PFAS regulations on discharged effluent, residuals, and biosolids. This NACWA sponsored study was conducted in 2022-2023 to obtain better quantification of these costs.

10:55am-11:25am

Treating PFAS in Biosolids

Speaker: Micah Blate, Hazen and Sawyer

This presentation will provide an update on PFAS in biosolids, with specific emphasis in treatment alternatives. Results from full-scale demonstrations of gasification/pyrolysis and supercritical water oxidation will be presented.

11:30am-12:00pm

Investigations of Microplastics in Biosolids – A Case Study in Philadelphia

Speaker: Vijay Bhatia PhD, Philadelphia Water Department

The morphology and composition of microplastics in biosolids was investigated. Morphology observed included fibers, fragments, films, foam, and beads. Major composition contributors included PET (17.5%), polyacrylates (12%), polystyrene (8.3%), poly(ethylene-propylene)-diene (4%), cellulose triacetate (3%), polypropylene-polyethylene-copolymer (3%), polyamides (3%), and polyurethanes (2.3%). In addition, softening agents, additives, and plasticizers have also been identified.

COLLECTIONS SYSTEMS PROGRAM

Rehabilitation

Moderators: Duk Shin, HRG; Roger Lehmann, Weston

8:40am-9:10am

Providing Long-Term Service Life Renewal and Infrastructure Conflict Resolution

Speaker: Sean P. Riley, PE, HDR

When two 30-inch water transmission mains were identified within the crown of a large diameter sewer beneath a park redevelopment project, HDR developed sewer and watermain designs under the Pittsburgh Water and Sewer Authority Large Diameter Sewer Rehabilitation Program to ensure long-term infrastructure service life beneath the to-be redeveloped park.

9:15am-9:45am

A Long Shot – Non-Circular CIPP of the 110-year-old Front Street Interceptor

Speaker: Jeffrey Bowra, PE, PMP, Capital Region Water

ASCE MOP 145 was the basis for this CIPP rehabilitation of CRW's Front Street Interceptor originally constructed in 1911. Using over 25 liner 'shots', the contractor installed 14,400 LF of CIPP liner in the non-circular interceptor using steam-cured and water-cured CIPP methods.

10:20am-10:50am

Innovative Auger Boring Approach for Rehabilitating a Century-Old Combined Sewer

Speaker: Jeff Lenner, PE, Mott MacDonald

Mott MacDonald presents an innovative sewer rehabilitation project conducted in the City of Pittsburgh. Learn how an Auger Boring sewer installation was used to renew a century old VCP combined sewer that is over 30-ft deep. This presentation shares lessons learned and offers a blueprint for addressing similar complex sewer rehabilitation challenges.

10:55am-11:25am

I&I Control Using Chemical Grouting in Princeton, NJ

Speaker: Andrew Filippi, P.E., Sewer Engineer, Municipality of Princeton

The Municipality of Princeton, New Jersey chose chemical (acrylamide) grouting as the primary technology used in their Mini-System #35 Sanitary Sewer Rehabilitation Project. The objective of this presentation is to demonstrate the benefits of using chemical grouting for inflow and infiltration reduction and increasing the useful life of a sewer by sealing and stabilizing the pipe envelope, discuss the history and drivers behind Princeton's choice of rehabilitation technologies, and share lessons learned on the project.

11:30am-12:00pm

Innovative Auger Boring Approach for Rehabilitating a Century-Old Combined Sewer

Speaker: William D. Friedah, PE, Utility Services Group, Inc.

Expanding Polymer Grout has been used for years in the reduction of I&I, however there are new and innovative solutions and products to assist Operators and Engineers in maintaining collection and treatment facilities. Learn the basics of what is possible and what has been completed in infrastructure rehab and maintenance.

Technical Program Details

ENGINEERING & CONSTRUCTION PROGRAM

Engineering Tools & Methods

Moderators: *Scott Armbrust, American Water;*
Nickolas Hines, Material Matters

8:40am-9:10am

Design Tools to Effectively Collaborate with Engineers, Owners, and Contractors

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

This presentation will provide an overview of innovative design tools that are available to engineering firms and utilities in order to develop a higher level of interaction and collaboration than in years past. Platforms such as HoloBuilder and BIM 360, which allow a direct link to BIM 3D models, will be presented.

9:15am-9:45am

Solving the Municipal Wastewater Puzzle in the Way that it Wants to be Solved – The Key to Project Success

Speaker: *Joseph M. Gianvito, P.E., KLH Engineers, Inc.*

The Rochester Area Joint Sewer Authority recently completed a \$53M project. There were many challenges along the way, including consent order deadlines, site constraints, soil contamination, and the pandemic. However, the project was completed in a way where all parties involved were left with a sense of pride and fulfillment.

10:20am-10:50am

Design Tools to Effectively Collaborate with Engineers, Owners, and Contractors

Speaker: *Steven Kestel, APG-Neuros*

Model Predictive Control (MPC) is an improvement on traditional PID based aeration control methods. This case study describes how a MPC system with Ammonia Based Aeration Control logic (ABAC) improved the accuracy of control while reducing the dissolved oxygen at the MWR North Treatment Plant.

10:55am-11:25am

Taking Your Data to the Next Level:

How to Best Model Full-Scale PFAS Removal with GAC

Speaker: *Adam Redding, PhD, Calgon Carbon Corporation*

Granular activated carbon (GAC) is typically evaluated for PFAS removal from water using rapid small-scale column tests (RSSCTs) or pilot studies, and test results are often misinterpreted. This presentation will cover how to best use this information, and the EPA's GAC breakthrough model, AdDesignS, to estimate GAC full-scale performance.

11:30am-12:00pm

Case Study – Overview of Protecting 4 Pennsylvania Wastewater Treatment Plant Clarifier Launderers from Premature Corrosion

Speakers: *Heather Stiner, Market Segment Manager – Water Infrastructure and Toby Butler – Business Development Representative, both with Sherwin-Williams*

This presentation will provide an overview of a clarifier launder project completed in Reading Pennsylvania. The project consists of protecting the launders from premature corrosion using protective coatings. All steps of the project, including pre-job, surface preparation, coating application and post application will be reviewed. Key takeaways will include: questions and observations to be taken during pre-job; hurdles and necessities during surface preparation; importance of proper coating selection; and post job inspection.

UTILITY MANAGEMENT & GOVERNMENT AFFAIRS PROGRAM

Digital Tools for Smarter Water

Moderators: *Maria White, PA One Call; Mike Kyle, LASA*

8:40am-9:10am

Streamlining and Digitizing Municipal Utility Operations Using GIS and Automation

Speaker: *Andrew Tuleya, ARRO Consulting, Inc.*

Explore how municipalities can integrate GIS into utility operations. Presentation to include automating, mapping, and digitizing assets and operations through GIS, creating scheduled and event-based notifications to track operations and maintenance activities (including PA One Calls), integrating utility mapping into a digital, mobile-friendly platform, and automating report production.

9:15am-9:45am

From Pipes to Passwords:

Asset Management as the Backbone of Cybersecurity

Speaker: *Heather Heltzinger, LO, Renegade Solutions, LLC*

An exploration of the integral link between asset management and cybersecurity in water and wastewater sectors. The presentation will highlight emerging technologies, evolving regulations, and the practical impact of either implementing or neglecting these essential systems, focusing on risk mitigation and operational efficiency.

10:20am-10:50am

What does a Digital Transformation Take – How Water and Wastewater Agencies are Making the Journey

Speaker: *Shawn Dent, PE, Carollo Engineers*

A water/wastewater utility initiated a Digital Water System (DWS) project which would guide the organization in their digital transformation. The purpose of the DWS is to develop an open-architecture database/dashboards to provide a nexus for an integrated software system that will provide a "smarter water system" from planning through operations.

10:55am-11:25am

Many Utilities are Moving to Peak Wet Weather Flow Management to Handle Peak Flow & Prevent Untreated Overflows

Speaker: *John Dyson, Aqua-Aerobic Systems, Inc.*

Utilities must manage peak flows that exceed biological treatment capacity. Cloth media filtration has been successful for this peak flow treatment. The presentation highlights wet weather treatment projects including piloting, permitting, revisions to consent decrees and facility design. It highlights data from a recent pilot study in Harleysville, PA

11:30am-12:00pm

Using AI to Better Understand Your Community Values: Introducing GHDUnpack

Speaker: *Emily Gallant, Jonathan Eller, PhD, GHD*

Join our session to unlock the true potential of your messy community data – past, present, and future. With AI-assisted engagement reporting, turn community perspectives into your strongest asset. Learn about the global innovation of GHDUnpack™. Richer insights, better decisions, and defensible, data-driven results. Engage your community with confidence – finally!

Technical Program Details

STORMWATER PROGRAM

Green Infrastructure & Equity

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

8:40am-9:10am

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

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

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

9:15am-9:45am

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

Speaker: Taylor Heffernan, Philadelphia Office of Watersheds

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

10:20am-10:50am

Industrial Waste Treatment

Speaker: Peter G. Baker, P.E., Rochem Americas, Inc.

This presentation will provide an overview of the use of specialized reverse osmosis for pre-treatment of landfill leachate coupled with several brief case studies highlighting the system's effectiveness in reducing ammonia/organic loading both common wastewater parameters (BOD, ammonia, phosphorous) as well as PFAS.

10:55am-11:25am

Quantifying the Economic and Social Benefits of Nature Based Floodplain Projects: A Case Study in the Saw Mill Run Watershed in Pittsburgh, PA

Speaker: Tom Batrone, HDR

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

11:30am-12:00pm

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

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

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

MONDAY AFTERNOON

BIOSOLIDS PROGRAM

Emerging Challenges & Resiliency

Moderators: Charles Winslow, GHD; Richard Valiga, Stantec

1:00pm-1:30pm

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

Speaker: Sudhakar (Sunny) Viswanathan, 374Water

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

1:35pm-2:05pm

Double your Cake solids in under 2 minutes.

A Performance Review of Elode Drying Technology

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

The Charter Elode drying technology has been full scale pilot testing across the US for the past 2 years with over 100 municipal sites visited. Also, a full review of the first USA installation of a 3m full size unit.

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

2:10pm-2:40pm

PXVNEO – Hydrothermal Carbonization at the Borough of Phoenixville WWTP

Speaker: Jeremy Taylor, SoMax Circular Solutions

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

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

3:40pm-4:10pm

South San Francisco-San Bruno Water Quality Control Plant Employs High-Solids Digestion to Enable Food Waste Co-Digestion & Advance Energy Neutrality with Lowest Lifecycle Cost

Speaker: Margaret Laub Niehoff, Anaergia

WRRF (Western Water Recycling Facility) incorporated high-solids digestion to cost-effectively expand capacity and avoid new digester build-out. Third-party validation showed healthy high-solids

Technical Program Details

digester operations. WRRF used excess capacity for a food waste co-digestion pilot, setting the stage for the WRRF to advance energy-neutrality and California organic waste diversion mandates to support greenhouse gas reductions.

4:15pm-4:45pm

Waste & Energy Recovery Lead to Sustainability at the Clearwater WWTF

Speaker: William Rehkop, PE, Brown & Caldwell; Colin O'Brien, Brown & Caldwell

The presentation presents DTMA's (Derry Township Municipal Authority) recently completed Energy Enhancement project, which includes new biogas management and gas conditioning system, new cogeneration system, digester improvements and high-strength waste equalization basin. The presentation will present operational data of the 1-MW engine sets and project economics (capital costs, annual savings and revenue, etc.).

COLLECTIONS SYSTEMS PROGRAM

Pumping Stations

Moderators: Chris Patackis, Brown & Caldwell; Lucas Chapman, Flow Assessment Services

1:00pm-1:30pm

Planning and Preliminary Design of a 650 MGD Effluent Pumping Station

Speaker: Matt Crow, PE, Hazen and Sawyer

This presentation will provide an overview of the planning, hydraulic modeling, and preliminary design efforts related to the proposed Northeast WPCP Effluent Pumping Station, a 650 MGD wet weather facility mandated by Consent Decree to be constructed and how these fits the flow scheme to meet PWD's (Philadelphia Water Department) Wet Weather needs.

1:35pm-2:05pm

Pump Station Consolidation (10MGD, 84-inch Micro Tunnel and 10k LF of 24-inch FM)

Speaker: Michael Bisignani, GHD

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

2:10pm-2:40pm

Challenges of Installing a Wastewater Pump Station over an Artesian Aquifer

Speaker: Mike Zappone, PE, Carollo Engineers

This presentation highlights the unique design and construction elements of installing a wastewater collection system pump station on a small site with unsuitable soils and artesian aquifers, and adjacent to a stream and wetlands.

3:40pm-4:10pm

Case Study: Using Sewer System Modeling to Aid in Reducing CSO's in the Borough of Waynesburg's Sewer System

Speaker: Derek L. Sellers, EIT, Gannett Fleming, Inc.

Sewer system modeling is a useful tool to develop collection, conveyance, and treatment system improvement alternatives. This case study highlights Gannett Fleming's modeling efforts, development of alternatives, and resulting design of treatment system improvements as part of the Borough of Waynesburg's efforts to develop a revised Long Term Control Plan.

4:15pm-4:45pm

Assessing Rehabilitation Techniques Through Hydraulic Modeling

Speaker: Julia Manzano, EIT, Arcadis

This presentation will show a novel method for modeling the impacts of manhole, main, tap, riser, lateral, and private-side sewer rehabilitation techniques. It is relevant to programs that assess impact of rehabilitation techniques on I&I. This method allows for countless rehabilitation strategies to be evaluated in a model to develop a catchment-tailored source reduction plans that optimizes cost and I/I reduction, including the ability to differentiate between inflow and rainfall induced infiltration, thereby reducing capital expansion projects.

ENGINEERING & CONSTRUCTION PROGRAM

Construction

Moderators: Chris Henry, Mott MacDonald; Jeff Lenner, Mott MacDonald

1:00pm-1:30pm

Doing More with Less: Utilizing Owner's Representatives to Get More Done

Speaker: David J. Kerr, Barton & Loguidice

Water/wastewater infrastructure is deteriorating rapidly. Utilities are also experiencing a reduction in staff. So how do you get more done with less? Annapolis, Maryland is utilizing Owner's Representatives to help execute design-build contracts to replace infrastructure. This presentation will discuss the process, the necessary information, the benefits/disadvantages, and examples.

1:35pm-2:05pm

You Can't Build That! Well Maybe You Can: Lessons Learned from Construction Sequencing to Maintain the Operations of a WWTP.

Speaker: David Hechmer, PE PA, Mott MacDonald

Working together to finish construction on time and on budget. Lessons learned from designing a construction sequence for the maintenance of plant operations compared to the contractor's means and methods.

2:10pm-2:40pm

Selecting Design-Build to Consolidate and Streamline Multiple Projects at the H.L. Mooney AWRP

Speaker: Meredith J. Welle, PE, HDR

This presentation will focus on why and how the PWCSA selected progressive design-build to rehabilitate, upgrade and modernize key unit processes across the H.L. Mooney AWRP, while maintaining service continuity and meeting current and future demand conditions.

3:40pm-4:10pm

Shutdowns and Tie-Ins for Incorporating a New 360 MGD Headworks at ALCOSAN. How Did We Do, and Where do We Head from Here?

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

The first major shutdowns and tie-ins have been completed on construction of a new 360 MGD headworks building for ALCOSAN. How did the tie-ins go and what did we learn to bring to future tie-ins and help keep the rest of the plant up and running with no issues?

Technical Program Details

4:15pm-4:45pm

DTMA Spring Creek Interceptor Upgrades and Dealing with Unforeseen Utility Conflicts

Speaker: Justin Bates, Herbert, Rowland & Grubic, Inc.

A simple sanitary sewer interceptor upgrade to allow beer to continue to flow is grounds for re-design during construction due to private unforeseen utility conflicts throughout Chocolate Town USA.

UTILITY MANAGEMENT & GOVERNMENT AFFAIRS PROGRAM

Moderators: Mark Pickering, GHD; Liz Cheeseman, GHD

1:00pm-2:05pm

Beyond the Town Hall PowerPoint: How to Conduct Effective Engagement to Build Understanding and Support for Projects

Speaker: Samantha Villegas, EPA Chief Communications Officer, EPA Office of Water

There's a Chinese Proverb that says, "Tell me, I forget. Show me, I remember. Involve me, I understand." True, effective engagement builds trust and fortifies the essential relationship your utility has with its community. In this session attendees will learn why engaging with customers (not just communicating to them) is so essential for project success, the full spectrum of engagement opportunities, how to pick the right level of engagement, and which engagement techniques are right for your project.

2:10pm-2:40pm

Utility Panel Discussion on the Benefits of Community Outreach

Speakers/panelists: Shannon Q. Drosnock, Executive Director Montgomery Township Municipal Sewer Authority, Mike Kyle, Executive Director Lancaster Area Sewer Authority, Andrew Moore, Director of Plant Operations Lehigh County Authority

The panelists will describe their community and public outreach programs and practices, and discuss positive outcomes as well as potential pitfalls. Based on their experience, they will make recommendations on how other agencies can develop their own community outreach programs, and as a result generate good will.

3:40pm-4:45pm

DEP Update on wastewater and MS4

Jay E. Patel, P.E., Assistant Bureau Director, PA Department of Environmental Protection

In this session, PADEP will provide an overview of regulatory programs that affect the water industry, and will highlight upcoming or potential changes in water, wastewater, and storm water regulations. This will also be an opportunity for DEP to talk to stakeholders about expectations with the current MS4 Permit.

STORMWATER PROGRAM

Green Infrastructure & Equity

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

1:00pm-1:30pm

Development? Inevitable. Storms? Unstoppable; Flooding Evaluation of the Route 51 Corridor

Speaker: Ifeanyi Odigboh, P.E., CFM, CPESC, Greenman-Pedersen, Inc.

Communities in the South-Hills region of Pittsburgh have attempted to mitigate flooding over the years to no avail. An integrated 1D-2D model coupled with an innovative integration of SMS-SRH2D and PCSWMM mesh creation will be used to craft a wholistic flood mitigation approach to assess alternative strategies and alleviate flooding.

1:35pm-2:05pm

PA's Evolving Nutrient Credit Trading Program: An Update

Speaker: Nickolas Hines, Material Matters, Inc.

Material Matters is deeply rooted in Pennsylvania's nutrient trading program, assisting with the purchase and sale of 250,000+ credits in CY2023. This presentation will discuss the multi-year trends of the program and identify future opportunities for the program – including enhanced engagement of the agricultural sector and interstate trading.

2:10pm-2:40pm

Lessons Learned on Implementation of Stormwater Fees – One Year Recap

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

In January 2022, the Warminster Municipal Authority implemented a stormwater fee. The implementation of the stormwater fee came with some challenges and successes. This presentation will discuss these challenges and successes, while outlining the lessons learned a year later regarding the implementation.

3:40pm-4:10pm

Stormwater Capture and Use –

A Planning Approach, Case Studies and Future Research

Speaker: Elisa Garvey, PE, PhD, Carollo Engineers, Inc.

Based on the findings of a Water Research Foundation project, this presentation explores various opportunities for stormwater capture and use, a decision framework that outlines associated challenges and benefits, and a list of research priorities to support more wide-spread implementation of stormwater capture and use as a water management strategy.

4:15pm-4:45pm

Using GIS and Automation to Comply with MS4 Requirements

Speaker: Andrew Tuleya, ARRO Consulting, Inc.

Leveraging GIS and automation to comply with MS4 requirements to establish, streamline and optimize an MS4 program. Presentation will touch upon providing digital public education and involvement opportunities, utilizing automation and mapping for IDDE, utilizing digital forms and GIS to complete utility inspections, creating a digital "good-housekeeping" plan, and identifying and tracking PRP/TMDL projects.

TUESDAY MORNING

COLLECTIONS SYSTEMS PROGRAM

8:00am-9:40am - Interactive Workshop

Moderators: Alex King, HRG; Liz Cheeseman, GHD

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

WET WEATHER FLOWS

Moderators: Matt Cichy, HRG, Melissa Smith, GHD

10:40am-11:10am

Manhole Inflow – The Uncomfortable Reality of How Much of our Peak Wet Weather Flow is Related to Sheet Runoff

Speaker: Jim Shelton, PE, Arcadis

This presentation will show the videos of field trials, demonstrate the inspection rubric, show photographic examples of the inflow defects

Technical Program Details

found, present the percentages of defects encountered, and present the corrective actions taken for each combination of defects found. This presentation will provide operations and engineering staff with specific data and lessons learned directly applicable to every sanitary sewer system.

11:15am-11:45am

Eliminating Rainfall Induced Infiltration in Sewers with Limited Visual Defects – WSSC’s Pilot Capital Grouting Program Results and Lessons Learned

Speaker: Andres F. Villarraga, Project Manager, General Manager’s Office of Performance & Accountability WSSC

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

ENGINEERING & CONSTRUCTION PROGRAM

PFAS

Moderators: Mike Sturgill, Trident Actuator, Samantha Smucker, HRG

8:00am-8:30am

Keeping Your i on PFAS – The Role of Ion Exchange for PFAS Removal

Speaker: Margie Gray, PE, Mott MacDonald

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

8:35am-9:05am

Right-Sizing a WTP PFAS Removal System

Speaker: Mark L. Pickering, P.E., GHD

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

9:10am-9:40am

Mitigating PFAS transport within Carbon-based Water Reclamation Facilities

Speaker: Christopher Curran, P.E., AECOM

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

10:40am-11:10am

Getting the Treatment Right – Pilot Study for an 80 MGD PFAS Surface Water Treatment Plant

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

Installing PFAS treatment for an 80 MGD surface water treatment plant is a 100-million-dollar decision. To obtain the most cost-effective

solution, a pilot study is necessary to determine the type and parameters of treatment. This case study will review the pilot process from test design through operation and conclusions.

11:15am-11:45am

Raccoon Creek WTP PFAS Removal Pilot Project Abstract

Speaker: Mark Romers – Director of Water Technologies, ITAC/Filter Magic

A Class Action Lawsuit was filed on February 23, 2021, in Summerville Georgia, alleging that multiple large companies illegally discharged toxic per- and polyfluoroalkyl substances (PFAS) into the Raccoon Creek watershed contaminating the raw water supply to the Raccoon Creek Water Treatment Plant that provides drinking water to Summerville Georgia.

INDUSTRIAL WASTE PRETREATMENT

Moderators: Dave Schlott, ARRO; Jenna Bishop; ARRO

8:00am-8:30am

Challenges and Lessons Learned of Developing and Implementing Intermunicipal Agreements

Speaker: Vanessa Nedrick, Remington & Vernick Engineers

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

8:35am-9:05am

Elements of an EPA Pretreatment Program

Speaker: Jenna Bishop, P.E., ARRO Consultants

The industrial pretreatment program can be a daunting undertaking. In this presentation, we will break down the main components of the program into bite size pieces that are more palatable. While we won’t be able to cover every topic in depth, we will skim the surface of each regulatory task to ensure that you are in compliance with the basic requirements of the pretreatment program

9:10am-9:40am

Little Things Making a Big Mess?

Sesame and Poppy Seeds’ Effect on Zinc Levels in Wastewater

Speaker: Ashley O’Connor, Entech Engineering

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

10:40am-11:10am

Leveraging Pretreatment Programs for One Water Initiatives: Findings from the Water Research Foundation Project

Speaker: Erica Yarbrough, Carollo Engineers

Water/wastewater systems are intertwined with environmental health, equity, among other values. The Water Research Foundation Project 4971 explores how utilities are incorporating pretreatment programs into One Water frameworks through a nationwide survey and case studies. The findings resulted in recommendations for leveraging pretreatment programs more fully within One Water strategies.

Technical Program Details

11:15am-11:45am

The Power of FOG Database Management

Speaker: *Tori Morgan, Entech*

No matter the size or complexity of a FOG Program, a critical component is data management. Because there is a lot of data, from contact information to schedules, from letters and other forms of communication to tracking violations. You'll be spinning your wheels if you don't get a handle on it from the start. We will review a number of data management programs, and how it may be possible to successfully tie into the data system you already have in place.

UTILITY MANAGEMENT & GOVERNMENT AFFAIRS PROGRAM

PFAS Regulations & Financing

Moderator: *Nick Modany, JMT*

8:00am-11:45am

PFAS: Treatment and Finance Options

Presented by the US Environmental Protection Agency

Speakers: *David Henning, PENNVEST; Magdalene Cunningham, Ruby Stanmyer, Aron Possler, all with EPA R3*

The workshop will feature presentations from EPA and PENNVEST leaders on discussing PFAS Treatment and Funding. The presentations will be followed by a Question-and-Answer session. The presentations will include a history of PFAS use and contamination, a focus on the drinking water and wastewater regulatory field, what to expect in the future, and what assistance and funding options are available to drinking water systems and POTWs.

MISCELLANEOUS TOPICS

8:00am-8:30am

April Fools! – Not So Funny

Speaker: *Michael Sedon, Cranberry Township*

On April 1, 2023, The Cranberry Township Wastewater Treatment Plant experienced a power outage that created a cascading effect which impacted overall treatment operations. This presentation will discuss the cause, actions taken, recovery and future prevention of similar incidents.

8:35am-9:05am

Activated Sludge Dynamic Filter Achieves Biological Nutrient Removal Performance in a Small Footprint

Speaker: *Dennis J. Barnes, P.E., Xylem, Inc.*

A 10-month pilot test at a western Pennsylvania wastewater treatment plant validated a new technology for achieving biological nutrient removal (BNR) in a small footprint.

9:10am-9:40am

Screenless IFAS System Eliminates Media Loss and Reduces O&M Costs for the City of Peterborough

Speaker: *Lauren Takitch, Entex Technologies Inc.*

A screenless WavTex™ IFAS system replaced a failing MBBR system at the 18 MGD City of Peterborough WWTP, eliminating O&M issues such as media breakage/washout while increasing nitrification. This presentation will detail the O&M benefits of the selected WavTex system and detail results from the nine-month process verification following the installation.

10:40am-11:10am

Field Instrument Surveys in Municipal Water-Wastewater Plants

Speaker: *Ravi Jethra, WIKA*

During an instrument audit/field survey, the engineers documented instrument/gauge installations that had failed, or were at risk of failure in an effort to identify areas of concern for the facility. The presentation is essentially sharing results based on findings and experience from the field instrument surveys/audits at numerous water/wastewater (municipal) facilities across North America.

11:15am-11:45am

PA's Evolving Nutrient Credit Trading Program: An Update

Speaker: *Nickolas Hines, Material Matters, Inc.*

Material Matters is deeply rooted in Pennsylvania's nutrient trading program, assisting with the purchase and sale of 250,000+ credits in CY2023. This presentation will discuss the multi-year trends of the program and identify future opportunities for the program – including enhanced engagement of the agricultural sector and interstate trading.

TUESDAY AFTERNOON

COLLECTIONS SYSTEMS PROGRAM

CSO

Moderators: *Jeff Cantwell, Flow Assessment Services; Chery Paulin, ADS Idex*

1:00pm-1:30pm

Taking on the Challenge of Deep Tunnel CSO Pumping

Speaker: *Mike Zappone, PE, Carollo Engineers*

This presentation will provide a case history of the 220 mgd City of Portland, OR, Swan Island Combined Sewer Overflow (CSO) Pump Station, with specific emphasis placed on design challenges, and lessons learned through more than ten years of operation.

1:35pm-2:05pm

CSO Management – From Stone Age to Space Age

Speaker: *Lie Hill, PE, Jacobs Engineering Inc.*

The presentation discusses the digital transformation of combined sewer overflow (CSO) monitoring in Wilmington, Delaware. The City of Wilmington is modernizing its CSO infrastructures by adding state-of-the-art level and flow monitoring at the CSOs and interceptors to provide 24/7 monitoring capabilities, optimize staff utilization, and build intelligent integrated wastewater management system.

2:10pm-2:40pm

The Perils of Surcharging Interceptors: Unintended Consequences of In-Line Storage

Speaker: *Jim Shelton, PE, Arcadis*

This paper identifies the causes, mechanisms of failure, evidence of likely failure of surcharges, inspection techniques to identify pipes at risk if surcharged, and rehabilitation methods once a pipe is thus compromised.

3:40pm-4:45pm

Quizzo

Moderated by *Members of the Collection System Committee*

The Sewer Collection System Quizzo offers a unique and fun way to explore the world beneath our streets. Participants gather to test their knowledge of sewer systems through an entertaining trivia game. Questions cover various aspects, from the history and design of sewer networks to their environmental impact and maintenance practices. Quizzos may delve into topics such as the evolution of sewage disposal

Technical Program Details

methods, the importance of wastewater treatment, and strategies for managing urban runoff. By engaging in friendly competition and learning about the vital role of sewer infrastructure, participants gain a deeper appreciation for the unseen systems that contribute to public health and environmental quality in our communities.

ENGINEERING & CONSTRUCTION PROGRAM

Treatment

Moderators: Ben Briston, Gannett Fleming; Rucha Shah, Arcadis

1:00pm-1:30pm

The Role of Innovation in the Nation's Quest for Reduced Effluent Nutrient Loads

Speaker: John Fraser, PE, Carollo Engineers, Inc.

This presentation will explore various definitions of innovation as they apply to advancing nutrient removal and is centered around examples of Incremental Innovation and Sustaining Innovation – where continuous improvement of existing wastewater processes and already innovative technology can make the effectiveness and efficiency of nutrient removal even better every time.

1:35pm-2:05pm

Optimization of Biological Nutrient Removal in the Sequencing Batch Reactor Process

Speaker: Kevin Bunting, Parkson Corporation

This presentation will explain how nutrients negatively impact receiving waters through eutrophication and creation of hypoxic regions. Wastewater treatment plant discharges can be a major contributor to water quality degradation in areas such as the Chesapeake Bay and the growing coastal hypoxia in the Gulf of Mexico. Properly designed and operated wastewater treatment plants conversely can provide major enhancements to water quality. The presentation will include an overview of the equipment that is typically used for each of the process steps including aeration systems and floating decanters along with various instrumentation options available for monitoring and process control.

2:10pm-2:40pm

Managing Wet Weather Challenges at the Pleasant Hills Authority WWTP

Speaker: Robert Dengler, P.E., Gannett Fleming, Inc.

Many sanitary sewer systems across the country are challenged with managing wet weather flows that substantially increase the flow rates to conveyance and treatment facilities that are not equipped to handle such flows. This presentation will describe how a novel flow management strategy enabled the Pleasant Hills Authority to double the flow of their wastewater treatment plant's peak flow capacity – without the construction of any new treatment tanks.

3:40pm-4:10pm

Filamentous and Sludge Blankets; BioMag Saves the Day!

Speaker: Richard Liebhaber (Process Intensification Sales Manager), Evoqua Water Technologies/Xylem

This paper presents the startup and operation of the world's largest municipal ballasted activated sludge system from February 2022 to September 2023. The story of a lagoon plant being transformed to an activated sludge plant and how BioMag managed a filamentous struggle.

4:15pm-4:45pm

Optimizing Operations to Increase MBR Capacity in Cold Weather Months

Speaker: Larry Morris, Kubota Membrane USA Corporation

Canton Water Reclamation Facility struggled with MBR capacity issues during cold weather since beginning operation in the winter of 2018.

Canton and Kubota partnered to investigate operational changes to increase capacity. These changes were put into place and Canton was able to treat all flows from 2020 forward.

INDUSTRIAL WASTE PRETREATMENT

Moderators: Dave Schlott, ARRO; Jenna Bishop, ARRO

1:00pm-1:30pm

Palmer Township: A FOG Program Success Story

Speaker: Tori Morgan, Entech

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

1:35pm-2:05pm

Reducing Bakery Wastewater BOD – A Case Study Part II

Speaker: Kara Humes, Entech

Large commercial bakeries can discharge a significant organic loading. This session is a follow up to the case study presented at PennTec 2023 where a sweet goods manufacturing industry and the method used to reduce FOG and total suspended solids in the wastewater effluent discharged to a POTW was discussed. This session will expand to the treatment of dissolved sugars with the use of a fluidized bed anaerobic digester to reduce BOD loadings.

2:10pm-2:40pm

Eliminating FOG and Odor in the Collection System – Small & Large Lift Stations

Speaker: Jim Dartez, Reliant Water Technologies

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

3:40pm-4:10pm

Pretreatment Program Update

Speaker: Ryan Shuart, US EPA

EPA will be providing a general update to the pretreatment program.

4:15pm-4:45pm

No Beer Goes to Waste

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

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

Technical Program Details

PROFESSIONAL OPERATORS PROGRAM

AGS/Miscellaneous

Moderator: Milissa Hirst, Carollo Engineers

1:00pm-1:30pm

Pennsylvania Department of Environmental Protection Microgrid Study: Defining Statewide Resilience Needs and Evaluating Potential Microgrid Solutions

Speakers: Daniel Eitzman, MPA, Department of Environmental Protection; Amanda Eyer, MS, Energy Programs Office

Exploring and modeling alternative energy technology at water treatment facilities to bring characteristics of energy resilience, reliability, and security during disruptive events. DEP's Statewide Microgrid Study combines multiple factors through an innovative GIS suitability analysis to prioritize potential locations for site-specific technology implementation.

1:35pm-2:05pm

Mainstream Deammonification via Partial Nitrification- Denitrification- Anammox (PdNA/PANDA): From Pilot- to Full-Scale Applications

Speaker: Dr. Yewei Sun, Hazen and Sawyer

The Partial Nitrification/Denitrification/Anammox (PdNA/PANDA) process innovatively removes ammonia from wastewater, offering substantial energy and chemical savings. However, its applicability, ammonia control, carbon sources, and scalability require further investigation. This presentation will showcase the experiences and lessons learned from multiple pilot-scale and full-scale studies

2:10pm-2:40pm

Aerobic Granular Sludge (AGS) – Past, Present, and Future

Speaker: John Fraser, PE, Carollo Engineers, Inc.

Aerobic Granular Sludge (AGS) is one of the most intriguing emerging technologies introduced to the wastewater industry. This discussion provides an overview of the process; discussion of enhancements to process; and illustrates several AGS configurations and layouts that provide more Robust, Easy to O&M, logically laid out, and Innovative systems.

3:40pm-4:10pm

Data Management and Visualization

Speaker: Mario Benisch PE, HDR

The arrival of new digital tools, data storage and visualization software has brought the need for utility centralized data management into focus. This presentation reviews planning and design considerations for data management and visualization and presents a working example dashboard with a unit process performance evaluation focus.

4:15pm-4:45pm

Landfill Leachate: Mountains of Ammonia

Speakers: Stanley A. Gorski, Jr. – Authority Manager, Western Westmoreland Municipal Authority; Mark J. Wolinsky – Operations and Compliance Manager, Western Westmoreland Municipal Authority

Representatives from Western Westmoreland Municipal Authority will discuss the challenges presented to operators when the POTW accepts landfill leachate for treatment. While the primary emphasis will be on the high loading imparted by ammonia-nitrogen on the treatment facility, other interesting side effects will also be discussed.

WEDNESDAY MORNING

ENGINEERING & CONSTRUCTION PROGRAM

Treatment – Capacity Investigation

Moderators: Chris Henry, Mott MacDonald; Bill LaPorte, Envirep

8:00am-8:30am

Switching from Aerobic to Anaerobic Digestion, the Design of a Digester Facility

Speaker: David Gryger, GHD

Following a capacity expansion, Cranberry Township's Brush Creek Water Pollution Control Facility needed upgraded solids handling facilities to accommodate the future loadings. This presentation will cover the selected alternative of anaerobic digestion and centrifuge dewatering, from the design of the initial screening of solids treatment options through the final deliverable.

8:35am-9:05am

Gasification and Pyrolysis of Municipal Wastewater Biosolids – Design, Operation, and Maintenance Considerations

Speaker: Charles Winslow, GHD

This presentation examines the design and operation of gasification and pyrolysis treatment processes utilizing municipal wastewater biosolids feedstock in terms of system sizing and throughput capacity, bioenergy recovery potential, biochar production and beneficial reuse options, and operations and maintenance considerations. The design of a complete gasification and pyrolysis system will be evaluated, including the selection and sizing of dewatering equipment, drying equipment, dried biosolids storage, pyrolysis reactor and heat recovery, biochar handling equipment, and air pollution control equipment.

9:10am-9:40am

Unraveling the Differences between Densified and Flocculant Activated Sludge Properties

Speaker: Haley Noteboom, Hazen and Sawyer

Sludge from densified and conventional activated sludge wastewater plants across the United States has been tested for particle size distribution, settleability characteristics, rheology, extracellular polymeric substances, and particle strength. The objectives of the study are to provide practical data regarding DAS characteristics for design, and identifying correlations for performance prediction.

10:10am-10:40am

Greenfield WRRF Delivers Complete Resource Recovery & Community Resilience

Speaker: Margaret Laub Niehoff, Anaergia

Greenfield 8 MGD WRRF provides community resilience through utility reliability, resource recovery, and economic development. WRRF takes a holistic approach to waste recovery, providing water recycling to replenish local groundwater basin, leveraging biogas from anaerobic digestion to meet plant energy demands, and converting solids to Class A soil amendment.

Certification

PA DEP Operator Certification

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

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

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

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

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

In addition to the Conference contact hours, **five workshops have been approved by the PA DEP for additional credit.** Go to page 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.

PA DEP Certification Exams

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

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

- Monday, April 8, 2024 – DEP SWRO, Pittsburgh Office – **SOLD OUT**
- Tuesday, April 16, 2024 – DEP NCRO, Williamsport Office – **SOLD OUT**
- Thursday, May 9, 2024 – Albright College, Reading – Paper Exam
- Tuesday, June 4, 2024 – DEP NCRO, Williamsport Office – **SOLD OUT**
- Wednesday, June 19, 2024 – Penn Stater Conf Center, State College – Paper Exam
- Thursday, June 20, 2024 – DEP New Stanton Office – **SOLD OUT**
- Wednesday, August 7, 2024 – DEP SWRO, Pittsburgh Office – **SOLD OUT**
- Tuesday, August 20, 2024 – DEP NERO, Wilkes Barre Office
- Tuesday, October 8, 2024 – DEP NERO, Wilkes Barre Office
- Wednesday, November 6, 2024 – Best Western – Lehigh Valley, Bethlehem – Paper Exam

Not a member of PWEA?

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

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

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

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



Workshop Details

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

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

Activated Sludge Refresher Course

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

You must attend both days to earn DEPO credit.

Partial credit will not be awarded.

Instructors: Jeremy Miller, PA DEP; Walter Higgins, US EPA

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

Monday, 8:45am-11:30am

Water Quality Monitoring Course

This course is PA DEP approved for 3.0 wastewater contact hours.

Course ID 9407

Instructor: Ann Smith, Xylem

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

Tuesday, 8:00am-11:30am

An Education and Training Committee Workshop

Wastewater Treatment Biological Processes

This course is PA DEP approved for 3.0 wastewater contact hours.

Course ID 9356

Instructors: Manuel de los Santos & Thea Davis, both Aqua-Aerobic Systems, Inc.

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

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

Instructors: Charles Winslow, GHD; Chris Boyd, Charter Machine; Howard Butler, GHD

The purpose of this course is to provide an overview of current trends in biosolids thickening, processing, dewatering, and disposal. The core topics will include thickening technologies, anaerobic digestion, aerobic digestion, and solids management planning. Dewatering strategies and technologies will also be discussed, as well as biosolids disposal and beneficial use opportunities.

2024 Workshops

All Workshop registration is online, please visit www.pwea.org/annual_technical_conference.php.

	DISCOUNT WITH FULL PENNTEC REGISTRATION		FEE FOR WORKSHOP ONLY*	
			BY MAY 31	ONSITE
Monday & Tuesday, 8:00am-5:00pm Activated Sludge Refresher Course Course ID 3884 PA DEP approved for 16.0 wastewater contact hours	\$25	PWEA Member	\$270	\$320
		Non-Member	\$345	\$395
Monday, 8:45am-11:30am Water Quality Monitoring Course Course ID 9407 PA DEP approved for 3.0 wastewater contact hours	\$25	PWEA Member	\$90	\$140
		Non-Member	\$165	\$215
Tuesday, 8:00am-11:30am – An Education and Training Committee Workshop Wastewater Treatment Biological Processes Course ID 9356 PA DEP approved for 3.0 wastewater contact hours	\$25	PWEA Member	\$90	\$140
		Non-Member	\$165	\$215
Wednesday, 8:00-11:30am – Safety Committee Workshop Introduction Locator Program Course ID 579 PA DEP approved for 3.0 drinking water & wastewater contact hours	\$25	PWEA Member	\$90	\$140
		Non-Member	\$165	\$215
Wednesday, 8:00-11:45am – Biosolids Committee Workshop Solids Handling & Disposal Course ID 9165 PA DEP approved for 3.5 wastewater contact hours	\$25	PWEA Member	\$90	\$140
		Non-Member	\$165	\$215
WORKSHOP FEES INCLUDE 3-RING BINDERS AND/OR HANDOUTS. * 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.				

Methods of Payment:

- **Check** (payable to PWEA) – Due within 10 business days of online registration.
- **Credit Card**

Cancellation/Substitution Policy

No refunds granted after May 31. A \$50 cancellation fee will be assessed on all refund requests received by May 31. All refunds must be requested in writing. Substitutions are permitted with a \$25 per person substitution fee. Substitutions may be made until May 31 and must be made in writing.

2024 Conference Attendee Pricing

All Conference registration is online, please visit www.pwea.org/annual_technical_conference.php.

CONFERENCE REGISTRATION

Includes technical sessions, continental breakfast, lunch, receptions and access to the Exhibit Hall.

	EARLY BIRD (SAVE \$50) BY APRIL 21	APRIL 22-MAY 31	AFTER MAY 31
Full Conference			
PWEA Member	\$515	\$565	\$615
Non-Member	\$625	\$675	\$725
Monday Only			
PWEA Member	\$285	\$335	\$385
Non-Member	\$350	\$400	\$450
Tuesday Only			
PWEA Member	\$285	\$335	\$385
Non-Member	\$350	\$400	\$450
Monday Only Young Professional Registration			
PWEA Member	\$190	\$240	\$290
Non-Member	\$255	\$305	\$355
• Discount Ticket with SYP Registration: PO Plant Tour - \$20			
Tuesday Only Young Professional Registration			
PWEA Member	\$190	\$240	\$290
Non-Member	\$255	\$305	\$355

NETWORKING EVENTS

Monday	
PO Plant Tour	\$35 per person
President's Reception	no charge
Awards Reception	no charge
Tailgate Dinner & Cornhole Tournament	\$55 per person

Tuesday	
Women in Water Luncheon	no charge
Beer & Pretzels Reception	no charge

Wednesday	
Golf Tournament	
• Single Golfer	\$120 per person
• Foursome discount	\$450 per foursome

Methods of Payment:

To qualify for the early registration discount, payment must be postmarked by April 19th.

- **Check** (payable to PWEA) – Due within 10 business days of online registration.
- **Credit Card**

Cancellation/ Substitution Policy

No refunds granted after May 31. A \$50 cancellation fee will be assessed on all refund requests received by May 31. All refunds must be requested in writing. Substitutions are permitted with a \$25 per person substitution fee. Substitutions may be made until May 31 and must be made in writing.



Save the Date

June 22-25, 2025

Kalahari Resort and Convention Center • Pocono Manor, 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 State College!