



Pennsylvania Water
Environment Association

Annual Technical
Conference & Exhibition

PennTec 2022
**CONFERENCE
PROGRAM**

June 5-8, 2022

Penn Stater Conference Center Hotel
State College, PA

PennTec 
2022 93rd Annual Technical
Conference & Exhibition

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Conference at a Glance

Sunday, June 5

11:00am-3:00pm Community Service Project
3:00-5:00pm Registration Open

Monday, June 6

7:15am-5:00pm Registration Open
7:45-8:45am Continental Breakfast in **Room 104**
8:25-8:30am 5-Minute Vendor Presentations
8:30-11:45am **Morning Technical Programs**
Biosolids - Room 206
Collection Systems - Room 207
Engineering & Construction - Room 208
Stormwater - Room 107
Utility Management - Room 109
9:00-11:30am Professional Operators (PO) and Students & Young Professionals (SYP) Plant Tour - **Meet at Main Hotel Entrance at 8:30am**
10:10-10:40am Morning Break in **Hotel Break Areas**
11:45am-1:00pm Exhibit Hall Opens
Complimentary Lunch in **Exhibit Hall**
12:30-1:00pm **Annual Business Meeting**
with *Dessert & Coffee - Senate Room*
12:55-1:00pm 5-Minute Vendor Presentations
1:00-4:45pm **Afternoon Technical Programs**
Biosolids - Room 206
Collection Systems - Room 207
Engineering & Construction - Room 208
Stormwater - Room 107
Utility Management - Room 109
2:40-3:40pm Afternoon Break in **Exhibit Hall**
2:40-4:40pm Operations Challenge - **Courtyard**
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 and Reception - **Deans Hall 1**
7:15-9:30pm Tailgate Dinner and Cornhole Tournament organized by the PWEA SYP Committee - **Deans Hall 2 & Terrace**

Tuesday, June 7

7:00am-5:30pm Registration Open
7:30-8:30am Continental Breakfast in **Exhibit Hall**
7:55-8:00am 5-Minute Vendor Presentations
8:00-11:45am **Morning Technical Programs**
Collection Systems - Room 207
Engineering & Construction - Room 208
Industrial Pretreatment - Room 107
Professional Operators - Room 206
Utility Management - Room 109
9:00-11:00am Stormwater Field Trip - **Meet at Main Hotel Entrance at 8:45am**
9:40-10:40am Morning Break in **Exhibit Hall**
11:15-11:45am Biosolids Mobile Sessions in **Exhibit Hall**
11:45am-1:00pm Complimentary Lunch in **Exhibit Hall**
11:45am-1:00pm Student Research Poster Presentations
11:45am-1:00pm Women's Initiative Summit and Luncheon - **Senate Room**
12:55-1:00pm 5-Minute Vendor Presentations
1:00-4:45pm **Afternoon Technical Programs**
Collection Systems - Room 207
Drinking Water - Room 109
Engineering & Construction - Room 208
Industrial Pretreatment - Room 107
Professional Operators - Room 206
Student Research Presentations - Room 205
2:40-3:40pm Afternoon Break in **Exhibit Hall**
4:45-5:45pm Beer & Pretzels Reception in **Exhibit Hall**
4:45-5:45pm Operator Olympics - **Courtyard**

Wednesday, June 8

7:00-8:30am Continental Breakfast in **Conference Lobby**
7:00am-12:00pm Registration Open
8:00-11:15am **Morning Technical Programs**
Engineering & Construction - Room 107
Safety - Room 109
9:00am Annual PWEA Golf Tournament - Pre-registration was required.
9:40-10:10am Morning Break
11:30am Conference Concludes in **Hotel Break Areas**

Workshops

These workshops are approved for additional PA DEP contact hours. **You must have a ticket to attend.** Limited tickets are available onsite.

Monday, June 6

8:00am-5:00pm Activated Sludge Refresher (Day 1 of 2)
Room 105
8:30-11:45pm Laboratory Ethics
Room 106
1:00-4:45pm Wastewater Collection Systems, Part 1
Room 108

Wednesday, June 8

8:00-11:30am Fats, Oils and Grease
Room 105
8:00-11:30am Fecal Forum II, Colilert-18 Method
Room 108

Tuesday, June 7

8:00am-12:30pm Wastewater Collection Systems, Part 2
Room 108
8:00am-5:00pm Activated Sludge Refresher (Day 2 of 2)
Room 105
1:00-4:30pm Permit Required Confined Space Awareness AND Excavation and Trenching Awareness
Room 106



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A Message From the Conference Planning Committee



Kara Humes

Chair, PennTec 2022
Conference Committee



Marilyn Baron

Chair, Exhibits and
Sponsors Subcommittee



Ed Woyden

Chair, PennTec 2022
Program Subcommittee

On behalf of the PWEA Board of Directors and the 2022 Conference Committee, we welcome you to PWEA's 93rd Annual Technical Conference and Exhibition (PennTec 2022) 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 organized a **Community Service Project** for Sunday. On Monday, the Professional Operators Committee and the SYP Committee are hosting a **Plant Tour**. Events following the Monday sessions are the **Operations Challenge** event; the **President's Reception**; the **Annual PWEA Awards Ceremony & Reception**; and the **Tailgate Dinner & Cornhole Tournament**.

On Tuesday, there is the **Stormwater Field Trip**; the **Women's Initiative Summit & Luncheon**; the **Beer & Pretzels Reception**; and **Operator Olympics**. The **Annual PWEA Golf Tournament** will be on Wednesday.

We believe the PennTec Conference will provide everything you need under one roof—education, vendor contacts, and networking.

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NEED CONTACT HOURS OR PDH CREDIT?

Pick up your tracking sheet in the PWEA Registration Area

Liability Waiver

By registering for this event, you agree to release and discharge all claims for your company, yourself, and any heirs against PWEA, its Board of Directors, successors, assigns, officers, agents, contracted employees, and volunteers, and will hold them harmless from any and all liability or demands for personal injury, psychological injury, sickness, death, or claims resulting from personal injury or property damage, of any nature whatsoever which may be incurred by you relating to or as a result of your participation in business activities such as trainings and social events sponsored by PWEA. By registering for this event, you also acknowledge that participating in these events may include a possible exposure to a communicable disease, including but not limited to MRSA, influenza, or COVID-19. Your further acknowledge that you are aware of the risks associated with COVID-19 and that certain vulnerable individuals may have greater health risks associated with exposure to COVID-19, including individuals with serious underlying health conditions as listed at <https://www.cdc.gov>. While particular recommendations and personal discipline may reduce the risks associated with participating in business activities or social events during the COVID-19 pandemic, by registering for this event, you acknowledge that the risk of serious illness, medical complications, and possible death does exist.

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- Rotary Strainer Screen
- Wash Press

Special Events

Community Service Project

Sunday, 11:00am-3:00pm

This year marks the fourth annual PennTec Community Service Project organized by the PWEA Students & Young Professionals (SYP) Committee.

State College Borough maintains a 2.5-acre stormwater detention basin, located along Westerly Parkway, that intercepts much of the stormwater from the southwest part of the Borough and a portion of Ferguson Township. The Borough encourages the public to use the basin as a Wetlands Education Center when the site is not flooded from significant rainfall events. With financial assistance from the Pennsylvania Department of Conservation and Natural Resources, trails, benches, educational signage and plantings were added to the site.

For the 2022 PWEA Annual Service Event, volunteers will team with the State College Borough to replace two walking bridges within the environmental center. Provisions were made for an alternative rain garden project if weather restricts access to the environmental center on the day of the service event.

We would like to acknowledge the Conference attendees who volunteered their time to help PWEA promote environmental stewardship and to leave a positive imprint on this year's host location.



Plant Tour Hosted by the Professional Operators and Students & Young Professionals Committees

Penn State Water Treatment Plant

Monday, 9:00-11:30am

The Penn State Water Treatment Plant project included a new water treatment plant (5.2 MGD) and water distribution system upgrades to meet regulatory requirements, operational demands, and fire protection water storage standards. The main level of the new plant is made up of microfiltration for bacterial/rotzoan treatment, nanofiltration for softening and removal of future contaminants, and granular activated carbon treatment facilities to remove chemical contamination. The project was completed in March 2017, with a final cost of \$58,700,000.

A limited number of tickets may be available on-site at the PWEA Registration Desk. The cost is \$25 per person. Bus will begin boarding at 8:30am at the Main Lobby Entrance and will depart the hotel at 8:45am.



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Special Events



Operations Challenge

Monday, 2:40-4:40pm - Courtyard

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, learn how the best wastewater collection and treatment personnel in the world display their skills at 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. Winners at the WEFTEC National Competition are determined by a weighted points system.

Come watch a demo of some of these events this year at PennTec.

PWEA Annual Awards Ceremony & Reception

Monday, 5:45-7:00pm - Deans Hall 1

The Annual Awards Ceremony honoring your colleagues who have won prestigious state and national awards will take place during this reception, which is open to all Conference attendees. Includes hors d'oeuvres and a drink ticket.



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APPLICATIONS

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Special Events



Tailgate Dinner & Cornhole Tournament

Monday, 7:15-9:30pm - Deans Hall 2 & Terrace

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 teams tailgating attire.

A limited number of tickets may be available at the PWEA Registration Desk. Tickets are \$45 per person. Dinner and a drink ticket are included.

PWEA Student Research Poster Contest

Tuesday, 11:45am-1:00pm

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



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Special Events

Women's Initiative Summit & Luncheon

Tuesday, 11:45am-1:00pm - Senate Room

Join your fellow colleagues for the third annual Women in Water Networking Summit. This luncheon will feature networking opportunities and a guest speaker, Trudy Johnston with Material Matters, Inc. Trudy will share her personal and professional challenges and successes, educational experiences, and discuss the importance of succession planning.

A limited number of tickets may be available at the PWEA Registration Desk. There is no charge to attend. Event T-shirts will be provided for Summit attendees.



PennState

Stormwater Field Trip *Hosted by the Stormwater Committee* **Penn State University Park's Green Infrastructure/Stormwater Management Facilities**

Tuesday, 9:00am-11:00am

Stormwater management has come to the forefront as an extremely important and timely topic of interest. Penn State's Engineering Services staff continually work to improve the sustainability of Penn State's stormwater and wastewater management, as well as its protection of potable source water.

They will lead a 1.5 hour tour of green infrastructure and stormwater management facilities on the University Park campus; will discuss topics such as their design, construction, and performance; and will provide an overview of Penn State's stormwater program.

A limited number of tickets may be available on-site at the PWEA Registration Desk. The cost is \$25 per person. Bus will begin boarding at 8:45am at the Main Lobby Entrance and will depart at 9:00am.



Operator Olympics

Tuesday, 4:45-5:45pm - Courtyard

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*
- *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.



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Special Events

2022 PWEA Annual Business Meeting

Monday, 12:30-1:00pm - *Senate Room*

The Officers of PWEA are elected by affirmative vote of a majority of Members in good standing and present at the Association's Annual Business Meeting. PWEA Members and Conference attendees are invited to attend the Annual Business Meeting of the Pennsylvania Water Environment Association.

2022/2023 Officer Nominees:

President: Kara Humes

First Vice President: Linda Leopold

Second Vice President: William LaPorte

Secretary/Treasurer: Dean Miller

Editor: Janet Miklos

First Federation Delegate: Christine Volkay-Hilditch (WEFTEC 2021-2023)

Second Federation Delegate: Douglas Pike (WEFTEC 2022-2025)



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

Alternative Disinfection to Chlorination Processes

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APPLICATIONS

Wastewater Disinfection
Potable Water Treatment
CSO Treatment
Industrial Disinfection Processes

BENEFITS

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No Harmful DBP's in Effluent
Low Residual Toxicity
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4 to 5 Log Disinfection Efficiency

EFFECTIVE ON

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Special Events



Annual PWEA Golf Tournament

Wednesday, Shotgun start at 9:00am

Join your colleagues for a friendly game of golf! The Tournament will be held at the Penn State White Golf Course, about 15 minutes from the hotel. Refreshments and prizes will be provided. Net proceeds from the golf tournament will benefit PWEA's Operations Challenge Program.

Pre-registration was required. On-site registration is not available for this event.

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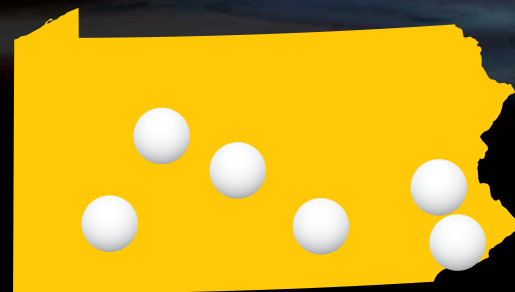


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Exhibit Hall Highlights



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 **Booth 75 or Booth 97** during the afternoon 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 during the Exhibit Hall receptions on Monday and on Tuesday. Each day's winners will be entered into a second Prize Drawing on Monday and on Tuesday

Bingo Participants

(as of May 6th; final list available at Registration Desk)

A C Schultes, Inc.
ADS Environmental Services
ARRO Consulting, Inc.
BissNuss, Inc.
Charter Machine Company
Chemstream
Core & Main LP
Coyne Chemical Environmental Services
CWM Environmental
Daman Superior
DRV, Inc.
Envirep/TLC
Environmental Service Laboratories, Inc.
Epoxytec/Tnemec
Entech Engineering, Inc.
Eurofins Environment Testing Philadelphia

Excelsior Blower Systems
Geiger Pump & Equipment
Gilson Engineering Sales
Greenman-Pedersen, Inc.
Gwin, Dobson & Foreman, Inc.
Hach Company
Harold Beck & Sons, Inc.
Herbert, Rowland & Grubic, Inc.
Iron Horse Environmental, LLC
Joos Equipment Company
KELSO
Keystone Engineering Group
Keystone Pump & Power, LLC
LMK Technologies
Mid Atlantic Pump & Equipment Co.
North East Technical Sales

O2 Water Resources, LLC
Pace Analytical Services, LLC
Pennoni Associates, Inc.
Quorum
Riordan Materials Corporation
Robert Brown Associates, Inc.
Spotts, Stevens and McCoy
Stone Hill Contracting Co., Inc.
Suburban Testing Labs
Thaddeus Stevens College
VTScada by Trihedral
W C Weil/Pumpman
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Exhibit Hall Highlights



Conference 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 may put as many of their tickets as they'd like in each marked container. You must be present to win. Guests and exhibitor representatives are not eligible for these drawings.

See page 32 for the Raffle Prize Drawing Schedule.



President's Reception

Monday, 4:45-5:45pm

Be sure to attend the President's Reception! Enjoy **FREE BEER** and snacks while you network with your colleagues and the vendors.

There is no charge for this event.



Exhibit Hall Food Functions

Lunch, afternoon break, 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.

During the Tuesday afternoon break, food stations will include a special offering of Creamery Cheddar Cheese and Penn State Summer Sausage.



Beer & Pretzels Reception

Tuesday, 4:45-5:45pm

We will be serving **FREE BEER** and soft pretzels! Come to the Hall to relax and visit with the vendors.

There is no charge for this event.

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Exhibit Hall Floor Plan





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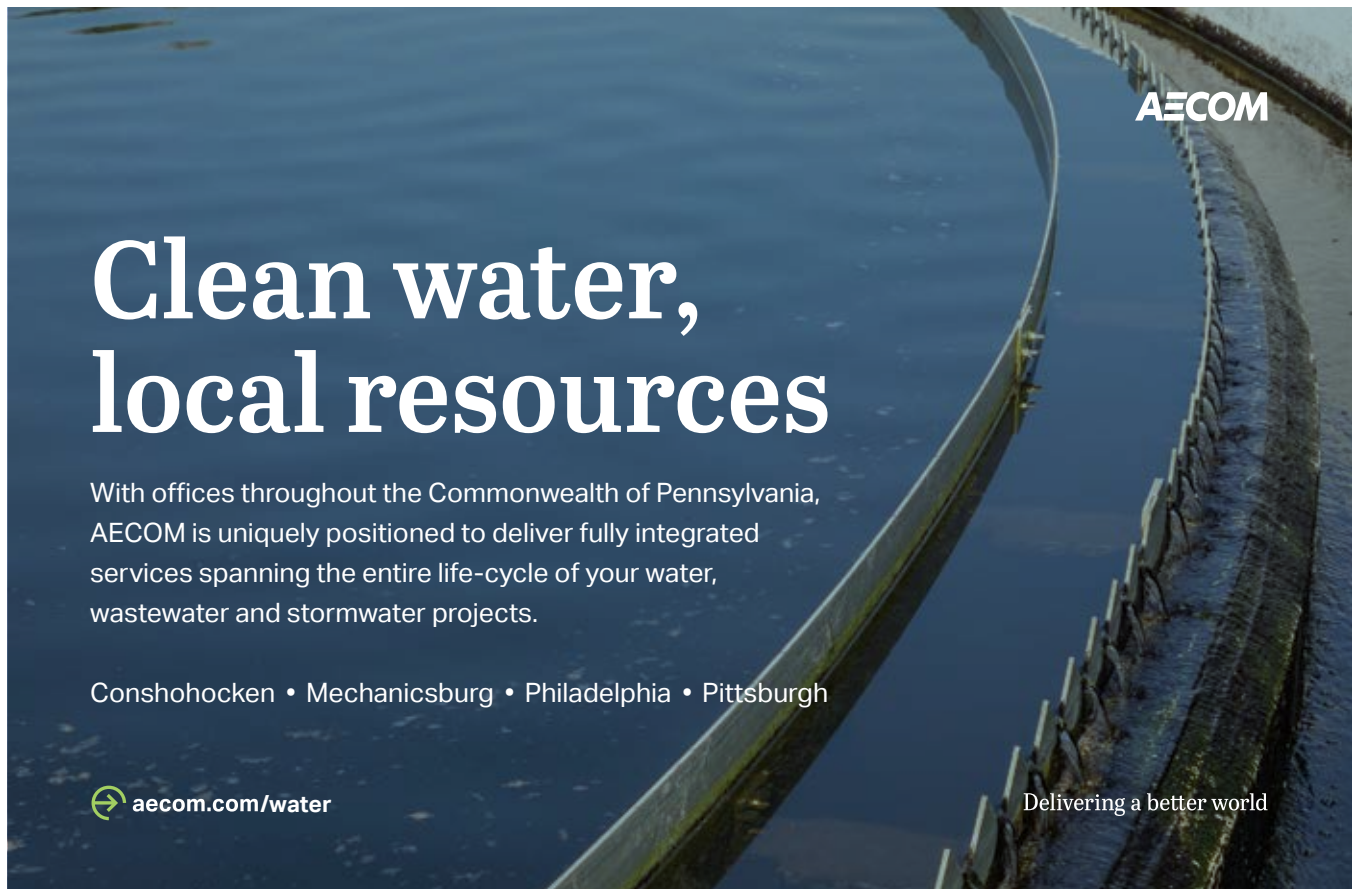
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Workshop Details

**You must have a ticket to attend.
Seating is limited. If you did not register in advance,
check at the PWEA Registration Desk for seat availability.**

Monday & Tuesday, 8:00am-5:00pm - Room 105

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.

Moderator: Walter Higgins, US EPA

*Instructors: Jeremy Miller, PA DEP; Marc Neville, PA DEP;
Anita Stabile, 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. Successful students will familiarize themselves with this material 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, 8:30-11:45am - Room 106

A Laboratory Practices Committee Workshop

Laboratory Ethics

This course is PA DEP approved for **3.0 drinking water & wastewater contact hours**. Course ID 7364.

Moderator: Linda Leopold, Pittsburgh Water & Sewer

Instructor: Larissa Hoover, Cranberry Township

This course provides detailed information for laboratory technicians and supervisors on the topic of lab ethics, based on Chapter 252. This course is for employees who need ethics refresher training for the laboratory every 14 months. The course discusses common definitions, state requirements, consequences, and prevention of unethical behavior, conflict of interest, ethics policies and agreements, data control, and legal defensibility, as well as red flags and data reporting.

Monday, 1:00pm-4:45pm - Room 108

Joint Professional Operators and Collection Systems

Committees Workshop

Wastewater Collection Systems, Part 1

This course is PA DEP approved for **4.0 wastewater contact hours**. Course ID 8876.

Moderator: Kevin Fisher, Western Westmoreland Municipal Authority

Instructor: Alton Whittle, GHD

This course is intended for students wanting to prepare for the Wastewater Class E operator certification test or for those wanting to increase their knowledge of wastewater collection systems. The primary purpose of this course is to provide an overview of collection systems, their design and construction and their management and operations.

Tuesday, 8:00am-12:30pm - Room 108

Joint Professional Operators and Collection Systems

Committees Workshop

Wastewater Collection Systems, Part 2

This course is PA DEP approved for **4.0 wastewater contact hours**. Course ID 8877.

*Moderator: Michael Ferretti, Kiski Valley Water Pollution
Control Authority*

Instructor: Joel Kostelac, GHD

This course is intended for students wanting to prepare for the Wastewater Class E operator certification test or for those wanting to increase their knowledge of wastewater collection systems. The primary purpose of this course is to provide an overview of the different types of pumping stations, their components and the regulatory requirements associated with pumping stations.

Tuesday, 1:00-4:30pm - Room 106

A Safety Committee Workshop (includes two courses)

Moderator: Shane Edge, Whitpain Township

Instructor: Kelly Kramer, RETTEW

Permit Required Confined Space Awareness

This course is PA DEP approved for **2.0 drinking water & wastewater contact hours**. Course ID 5923.

This course will introduce employees to the hazards of confined spaces and educate them on the basic hazards and requirements so they can determine if they need to attend a full course based on their work tasks. Course content includes: definition of a confined space, overview of employer requirements, overview of potential hazards, and overview of entry requirements.

Excavation and Trenching Awareness

This course is PA DEP approved for **1.0 drinking water & wastewater contact hours**. Course ID 6428.

This course is designed to provide general information on the OSHA requirements and best practices for excavation operations. Course content includes: statistics, behavior modification, inspection items, utility location, soil mechanics, protective system options, OSHA-specific requirements, and hazard recognition.



Please be respectful of the presenters and other attendees. Set your cell phone to vibrate or turn it off during conference training sessions, workshops and the Annual Business Meeting. If you see that you're receiving a call, please exit the training or meeting room to accept or return the call. Thank you!

Workshop Details

Wednesday, 8:00am-11:30am - Room 105

A Professional Operators Committee Workshop

Fats, Oils and Grease

This course is PA DEP approved for **3.0 wastewater contact hours**. Course ID 6659.

Moderator: John Fletcher, Duke's Root Control

Instructor: Sam Mcleod, FOG BMP, and US FOG Alliance

This course is designed for the operator with known Fats, Oils and Grease (FOG) problems. It will address the problem, first at the source by discussing grease taps and interceptors and then address the issue of how to develop a grease hauling and treatment program. The course will outline ways to prevent FOG from entering the wastewater collection and conveyance system; how FOG is treated at treatment facilities; and how successful FOG programs are being administered and enforced.

Wednesday, 8:00am-11:30am - Room 108

A Laboratory Practices Committee Workshop

Fecal Forum II, Colilert-18 Method

This course is PA DEP approved for **3.0 drinking water & wastewater contact hours**. Course ID 6483.

Moderator: Larissa Hoover, Cranberry Township

Instructor: Curtis Huey, Mechanicsburg Wastewater Treatment Plant

This course will present the Colilert-18 Method to test for fecal coliform. It will feature a hands-on demonstration. The course will also instruct the students on how to apply to DEP for approval to use this testing method in their lab.



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Raffle Drawing Schedule

Schedule for Conference Raffle Drawings in the Exhibit Hall

You must be present to win.

Guests and Exhibitor Representatives are not eligible for the raffle drawings.

Monday Lunch

12:30pm

Ring Doorbell

Monday Afternoon Break

3:30pm

Mini Growler Kegerator

\$200 Dick's Gift Card

Monday President's Reception

5:30pm

Wine Fridge with Wine

\$200 Amazon Gift Card

Tuesday Morning Break

10:15am

Ring Doorbell

\$200 Lowes Gift Card

Tuesday Lunch

12:30pm

\$200 Dick's Gift Card

Tuesday Afternoon Break

3:30pm

Wine Fridge with Wine

\$200 Amazon Gift Card

Tuesday Beer & Pretzels Reception

5:15pm

Kegerator - Holds 1/6 Keg

\$200 Lowe's Gift Card



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Technical Program Details

New for 2022

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

MONDAY MORNING

8:25-8:30am – 5-Minute Vendor Presentations

Exhibiting vendors will make 5-minute presentations about their products or services prior to the half-day Technical Programs.

Biosolids - Double Your Cake Solids

Presented by Charter Machine Co

Collection Systems – Trumbull MFG Products Composite Manhole Lids

Presented by Trumbull MFG

BIOSOLIDS PROGRAM

Biosolids Processing, Handling & Technology Application

Room 206

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

8:30-9:00am – Fundamental Concepts of the Thermochemical Processes of Gasification and Pyrolysis

Speaker: Philip Pedros, Mott MacDonald

Fundamentals of gasification and pyrolysis of biosolids generated from the treatment of sewage sludge, including the thermochemical conversions, reactor types, design considerations, case studies and a review of current manufacturers focused on the use of sewage residuals as a feedstock.

9:05-9:35am – Pennsylvania WWTP's Minimize Operating Cost and Improve Aerobic Digestion by De-Coupling Aeration from Mixing

Speaker: John Koch, PE, EnviroMix

Several plants in Pennsylvania are successfully using de-coupled aeration and mixing to substantially reduce energy use and improve the aerobic digestion process. Typical energy savings exceed 50-75% versus the traditional approach of continuous aeration. Incorporating denitrification into the aerobic digester further reduces energy use, stabilizes pH and improves dewatering.

9:40-10:10am – Innovations in Processing and Storage of Biosolids

Speaker: Dr. Lowell V. Sieck, CSI Environmental, LLC

CSI Environmental has developed and deploys passive, low carbon foot-print technology to dewater and store industrial and municipal biosolids. Using this technology for processing biosolids can result in savings of hundreds of thousands of dollars per project compared to conventional, high energy requiring presses or centrifuge technology. Examples of successful applications are presented.

10:10-10:40am - Morning Break in Hotel Break Areas

10:40-11:10am – Adapting to Contaminants: Biosolids Waste-Free Future

Speaker: Elizabeth Bridges, Bioforcetech Corporation

Pressure from disposal regulations, CECs, and carbon emissions are forcing the organics industry to rethink business as usual. Join us to discuss Bioforcetech's innovative approach to transforming biosolids into a high-quality product at net-zero energy being sold in markets ranging from soil to fashion.

11:15-11:45am – Optimizing Polymer Mixing and Activation: Following the Science

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

Presentation illustrates how to optimize polymer performance by understanding many factors such as polymer chemistry, handling, water, mixing profile, and aging. Laboratory testing and field evaluations at water and wastewater treatment plants confirmed that well-designed polymer systems improved dewatering process with significant polymer savings without sacrifice in cake solids.

COLLECTION SYSTEMS PROGRAM

Sewer Rehabilitation

Room 207

Moderators: Duk Shin, Gannett Fleming; and Alexandria King, Arcadis

8:30-9:00am – Multi-Jurisdictional Sewage Pumping Station Consolidation Addresses Environmental Concerns

Speaker: Thor Young, GHD

Allegany County and LaVale Sanitary Commission are working together to upgrade sewage conveyance for a multi-jurisdictional planning area to improve resiliency and reduce the number of CSOs. The resulting project will install new gravity sewer via microtunnelling, decommission three existing sewage pumping stations, construct a new regional pumping station, and replace the force main to the Cumberland WWTP.

9:05-9:35am – Reducing I&I and Collection System Improvements

Speaker: Tiffany Harrison, Gannett Fleming, Inc.

The City of Baltimore faced many challenges to improve its aging sanitary system. Under a mandate from EPA, the city needed to investigate and complete improvements within budget and on time to avoid penalties and provide sustainable operation for the residents' future.

9:40-10:10am – Ten Mile Force Main: Design Considerations, Analysis & Construction

Speaker: Stephanie Cuthbert, Remington & Vernick Engineers

Force mains can significantly reduce the size and depth of sewer lines and decrease the overall cost of construction. For a recent 10-mile force main project, several types of materials, construction methods, and layouts were required for proper design and construction. This presentation will examine the project and review the various design considerations and lessons learned.

10:10-10:40am - Morning Break in Hotel Break Areas

Technical Program Details

10:40-11:10am – When Engineering is the Easy Part:

Public Cooperation for a Sewer Extension Project

Speaker: Michael Krieger, EIT, GHD

In order to maintain Act 537 compliance, many municipalities face pressure from regulatory agencies to eliminate on-lot systems and connect homes to the public sewer system. While the engineering aspects of the project may be challenging, receiving support, buy-in and cooperation from the public is critical to project success.

11:15-11:45am – Don't Drill There: Locating a 140-Year-Old Brick Sewer 50 Feet Beneath Proposed Construction

Speaker: Stephen Britt, PE, Johnson, Mirmiran & Thompson, Inc.

In order to design a critical pumping station for Philadelphia Water Dept., the exact horizontal location of a brick sewer deep underneath the proposed project site needed to be found. After evaluating various methods, the inside of the sewer was surveyed conventionally using man-entry to determine a horizontal baseline through the site.

ENGINEERING & CONSTRUCTION PROGRAM

Constructability

Room 208

Moderators: Richard Heinick, Gannett Fleming; and Robert McIntyre, Stone Hill Contracting Co., Inc.

8:30-9:00am – Novel Client-Managed Construction Approach Saves Municipality Time and Money

Speaker: Martin F.A. Cribb, II, Gannett Fleming Project Development Corporation

Faced with the task of constructing a new dewatering facility to address changing circumstances, the Annville Township Authority opted to pursue a unique, internally led design-build approach utilizing the COSTARs program to reduce the overall project duration by approximately one year and realize a cost savings of nearly 35%.

9:05-9:35am – Prioritizing Constructability and Sequence for Project Success

Speakers: Joel Kostelac, PE, BCEE, and Mark Zhou, both with GHD; and Jeff Slabinski, Municipal Authority of the Town of Bloomsburg

After major delays and cost increases due to contractor issues and severe weather in their previous upgrade, the Municipal Authority of the Town of Bloomsburg (MATB) was faced with another facility upgrade. This time, however, MATB and GHD prioritized design, constructability and resilience to minimize risk.

9:40-10:10am – Transforming the Construction Industry Using Innovative Technology

Speakers: Carmen Figueroa, ENV SP; and Nicholas Lewis, both with Gannett Fleming

The lifeblood of any industry is the progression of innovation to replace traditional means and methods. This presentation focuses on innovative opportunities in construction management for water/wastewater, transportation, and industrial infrastructure projects. Technologies discussed include Unmanned Aerial Vehicle (UAV), augmented reality, and Voice-Driven data collection technology for field users.

10:10-10:40am - Morning Break in Hotel Break Areas

10:40-11:10am – The Car or the Shark – Managing the 10 Risks of the Traditional Design-Bid-Build Process

Speaker: Dennis Clough, Navitas

Cars, sharks, and the design-bid-process all have one thing in common – risks. This presentation discusses the Risk Perception concept and how it affects us. It will then cover the 10 risks of the design-bid-build process and finish with an overview of available alternative project delivery approaches.

11:15-11:45am – How to Ward Off Claims When It Comes to Large Complex Tunneling & Wastewater Projects

Speaker: Kristen Braden, PE, Anser Advisory

Large, complex construction projects such as tunnel and plant improvement projects are rife with potential challenges that may result in additional time or expense. Lessons learned on previous tunnel and large plant projects can help project teams develop a claims avoidance and resolution strategy for their projects.

STORMWATER PROGRAM

Adapting to Change

Room 107

Moderator: Nathan Walker, Gannett Fleming

8:30-9:00am – Evaluating the Inception and Perception of Climate Change with Stream Flow in Southcentral Pennsylvania

Speakers: Kevin Hoover, PG, PH, SPWS; and Susan Hoover, GIT, both with Buchart Horn, Inc.

Long-term, day-scale stream flow data from central Pennsylvania were analyzed to estimate the start of discernable climate change effects, evaluate whether flood flow frequencies are changing, and illustrate changing seasonal patterns that may affect in-stream operations and construction.

9:05-9:35am – Regional Flooding Challenges and Approaches, Canfield, OH, Flood Mitigation Studies

Speaker: Ifeanyi Odigboh, PE, CFM, CPESC, ms consultants, inc.

An unprecedented storm rainfall in May 2018 exacerbated flooding issues in Canfield, OH. Dual drainage modeling is used to simulate flow transfers between surface and subsurface drainage systems to evaluate the root causes. Storm pipe upsizing, stream enhancements and other alternatives are used for flood mitigation and prevent property damage.

9:40-10:10am – New Tools from the Chesapeake Bay to Evaluate Climate Risks and Plan Resilient Restoration

Speaker: David Wood, Chesapeake Stormwater Network

This presentation will introduce new tools Chesapeake Bay managers are using to assess climate risks to their communities and inform more resilient planning and design. These tools will help managers evaluate their stormwater design criteria and floodplain management regulations in the context of projected climate impacts and leading BMP vulnerabilities.

10:10-10:40am - Morning Break in Hotel Break Areas

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SVI₃₀ comparison of aerobic granular sludge (left) and conventional activated sludge (right)



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Technical Program Details

10:40-11:45am – DEP Roundtable

Speakers: To be announced

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 representatives from PA DEP and MS4 permittees about the tools and cost-effective approaches that communities can use to address increasing stormwater demands.

UTILITY MANAGEMENT PROGRAM

Sustainability, Resiliency & Regulatory Update

Room 109

Moderator: Michael Kyle, Lancaster Area Sewer Authority

8:30-9:00am – Utilities Inc. – Asset Management Journey

Speaker: Dave Sandy, GHD

Utilities, Inc., (UI) is a privately owned water and wastewater utility. UI owns and operates several systems in the Mid-Atlantic region. UI is confronting increasing expectations to control near and long-term costs through more efficient operations and capital planning, address aging infrastructure, and manage knowledge loss from impending workforce retirement.

9:05-9:35am – Optimize Asset Management with GIS

Speaker: Katie Baltzley, Spotts, Stevens and McCoy

Utilize GIS workflows for asset management, including maintenance and inspections. Featuring a Township's case study for outfall inspection process using GIS tools.

9:40-10:10am – Cyber, System, and Operation Security for Water & Wastewater Systems - A Discussion of Industry Standards, Best Practices, and Technology Evolution

Speaker: Tim Donaldson, VTScada by Trihedral

This presentation will provide an overview, relevant background, and industry standards for cyber-security; as well as review operational best practices, introduce some architectural security designs, and remote connectivity scenarios. Some of the topics include: industry standards which provide guidance; security procedures for accessing or leaving a SCADA system; remote connection security; system design considerations and infiltration mitigation.

10:10-10:40am - Morning Break in Hotel Break Areas

10:40-11:10am – The 21st Century Water Workforce—Getting Younger, Motivations, Opportunities, and New Realities

Speaker: Heath A. Edelman, Thaddeus Stevens College of Technology

Our industry has grown increasingly concerned about our aging operations workforce and the lack of a good pipeline to replace staff that are retiring at increasingly larger rates. In developing and keeping staff, we must examine current practices and whether workforce development must be viewed more as career development.

11:15-11:45am – Utilities Management and Operations for the Future

Speaker: William Orlowsky, PE, Spotts, Stevens and McCoy

Contractors, professionals, and municipalities are facing a shortage of trained mechanics, technicians, and operators. How will water and sewer systems cope with a smaller talent pool of trained individuals for their staffs and vendors?

MONDAY AFTERNOON

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

Exhibiting vendors will make 5-minute presentations about their products or services prior to the half-day Technical Programs.

Biosolids – Biosolids Treatment Solutions for Emerging Contaminants

Presented by Veolia Water Technologies

Collection Systems – Biological Metabolism in the Collection System

Presented by Quorum

Engineering & Construction – Tips & Tricks for Working with Your Engineer

Presented by ARRO Consulting, Inc.

BIOSOLIDS PROGRAM

Case Studies

Room 206

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

1:00-1:30pm – Autogenous Biochar Production from Municipal Wastewater Biosolids Feedstock at the Ephrata Borough Authority WWTP #1

Speaker: John Harris, GHD

This presentation explains the merits of biodrying coupled with pyrolysis as a cost effective and environmentally friendly biosolids processing alternative. The decision-making process that led the Authority to select biodrying and pyrolysis is discussed, with a focus on its favorable life cycle cost and other benefits relative to anaerobic digestion.

1:35-2:05pm – Environmental and Financial Benefits of Biosolids Drying Facilities

Speaker: Tid Griffin, Griffin Residuals, LLC

A case study of three biosolids drying installations with single-pass belt drying technology, representing anaerobic, aerobic and undigested biosolids, will be presented; including a review of operational costs, challenges discovered, and how WWTP operation impacts drying operations. Summary will include ROI, options for regional drying facilities, and beneficial use of Class A biosolids.

2:10-2:40pm – “Starting with the End in Mind” – Howard County’s Journey through Master Planning and Dryer Start-up to Create a Marketable Product

Speaker: Lisa Challenger, Material Matters, Inc.

Material Matters supported Howard County, Maryland with selecting a biosolids technology by “Starting with the End in Mind.” Focusing on the finished product throughout the entire project – Master Planning to Start-Up - created a product with characteristics preferred by the local market, resulting in annual outside-the-gate cost savings of \$300,000+.

Technical Program Details

2:40-3:40pm - Afternoon Break in Exhibit Hall

3:40-4:10pm – Co-Digestion to Class A Biosolids – Altoona Water Authority's Path to Water Resource Recovery

Speaker: Larry Doyle, Energy Systems Group, LLC

The Altoona Water Authority is constructing an anaerobic co-digestion and biogas-fueled biosolids drying complex at their Westerly Wastewater Treatment Facility. This presentation describes how a collaborative development process was used to connect new treatment assets to the revenues and savings associated with the regional waste and biosolids disposal markets.

4:15-4:45pm – Start-Up and Performance Overview of AquaNereda® Aerobic Granular Sludge Technology at Riviera Utilities WWTP at Wolf Creek

Speaker: Joe Tardio, Aqua-Aerobic Systems, Inc.

The Riviera Utilities Wastewater Treatment Plant at Wolf Creek in Foley, Alabama, features North America's commercial introduction to the AquaNereda® Aerobic Granular Sludge Technology. Aerobic granular sludge is an advanced secondary treatment process that utilizes the layered microbial community of aerobic granules to perform biological wastewater treatment, including biological nutrient removal.

COLLECTION SYSTEMS PROGRAM

Flow Measurement and Analysis

Room 207

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

1:00-1:30pm – The Lure of Depth-Only Measurement for I&I Assessment

Speaker: Kevin Enfinger, PE, ADS Environmental Services

Area/velocity meters are flow measurement standard. Recently, depth-only meters are promoted as a cost-effective alternative. They do not measure velocity. Instead, they calculate velocity, using Manning's equation and are dependent on multiple variables. Four studies carefully examine depth meter accuracy and reveal wide variability in data quality.

1:35-2:40pm – Tips and Tricks to Assure only Valid Flow Meter Data are Used in Sewer Assessments

Speakers: Alexandria King, Arcadis; and
Jeff Cantwell, Flow Assessment Services

Flow meter data is a great tool for prioritizing sewer system rehabilitation, but only if the data is accurate. Learn how several unique methods were used to validate 116 flow meters and 22 rain gauges in Lehigh County, PA. These methods can easily be applied to any sewer metering project.

2:40-3:40pm - Afternoon Break in Exhibit Hall

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

Moderators: Jim Shelton, Arcadis; and Jeff Cantwell,
Flow Assessment Services

The PWEA Collection Systems Committee is bringing a successful concept from the Water Environment Federation (WEF) National Conference and the WEF National Collection Systems Specialty Conference to the PennTec Conference: Mobile Sessions in selected 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.

Meet near the PWEA Registration Desk at 3:25pm.

Hydrophilic End Seals

Presented by LMK Technologies

Private Property Inspections

Presented by Duke's Root Control

GIS and Collections Systems

Presented by Spotts, Stevens and McCoy

360 Degree Imagery

Presented by Larson Design Group

Manhole Rehab Material Differences

Presented by Epoxytec

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Technical Program Details

ENGINEERING & CONSTRUCTION PROGRAM

Wastewater Design & Case Studies

Room 208

*Moderators: Richard Heinick, Gannett Fleming; and
Robert McIntyre, Stone Hill Contracting Co., Inc.*

1:00-1:30pm – A Real-World Example of a Successful Constructability Review for a Wastewater Treatment Plant

Speaker: James Weber, PE, Anser Advisory

The goal of a constructability review is to save the owner time and money by uncovering issues that may affect construction. This presentation will uncover benefits of a constructability review and also discuss an example of a successful review for the City of Akron, Ohio Water Reclamation BioCEPT facility.

1:35-2:05pm – Return Activated Sludge Improvements at the Woods Run Wastewater Treatment Plant

*Speakers: Meredith J. Welle, HDR Engineering, Inc.,
and Jeff Argyros, ALCOSAN*

The Return Activated Sludge capacity of the ALCOSAN Woods Run WWTP will be increased as part of the Plant Expansion Program. Constructability and maintenance of plant operations are a focus of this presentation, and the subsequent design decisions that were made to evaluate capacity requirements and overcome any constructability challenges.



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2:10-2:40pm – Tale of Two Cities, Marcel Lakes Version: Expansion and Reduction

*Speakers: Jason Marie, Mott MacDonald; and
Gerald DeBalko, PA American Water*

After the PUC required PA American Water to purchase the Marcel Lakes WWTP and collection system, they embarked on a multi-year phased approach to replace and upgrade critical infrastructure. These improvements reduced I&I and improved operational reliability and were constructed between August 2016 and December 2020.

2:40-3:40pm - Afternoon Break in Exhibit Hall

3:40-4:10pm – Citronelle, Alabama, Wastewater Facility Upgrade Designed to Meet Ultra-Low Phosphorus Limits

Speaker: Michael Cole, Nexom

Phosphorus-fed algae blooms have forced environmental regulators to decrease phosphorus limits imposed on wastewater treatment plants. A 0.1 mg/L limit has historically been considered an ultra-low target but in Citronelle, AL they were faced with an ultra-low phosphorus target of <0.02 mg/L which they were able to meet thanks to the Blue Pro Reactive Filtration system.

4:15-4:45pm – Oxidation Ditch Plant Modifications for Nitrogen Removal and Foam Control

Speaker: John Scheri, Mott MacDonald

This presentation details oxidation ditch plant modifications, which included conversion to intermittent aeration and construction of surface hypochlorite spray system for foam control. Following modifications, plants effluent nitrate concentrations are in low single digits and foam problems ceased.

STORMWATER PROGRAM

Managing Stormwater Infrastructure

Room 107

Moderator: Kelly Lennon, WSP USA, Inc.

1:00-1:30pm – The Benefits of Stormwater Research

Speaker: Justin Kerns, PE, CPESC, ms consultants, inc.

This presentation will discuss three stormwater research projects in conjunction with Ohio Department of Transportation, Ohio State University, University of Iowa, and United States Geological Survey. We will discuss the goals/benefits of these research projects, who these research efforts can benefit, and how the public-private-academic partnerships made them successful.

1:35-2:05pm – Linear Infrastructure Management with ArcGIS Online Tools

Speaker: Todd Plank, GHD

For decades, traditional GIS software required a professional who could put large amounts of time to learn GIS software and maintain data. This presentation will review web-based ArcGIS Online implementations by two municipalities and the tools being used to manage sanitary and storm sewer system to meet compliance and asset management goals.

Technical Program Details

2:10-2:40pm – Ramping Up a Stormwater Fee

Speaker: Tony Igwe, Pittsburgh Water and Sewer Authority

The Pittsburgh Water and Sewer Authority has ramped up stormwater management using its 2016 “Green First Plan” as a guide, and in 2021, proposed and passed its first ever stormwater rate. Our session will discuss both the achievements and challenges of our stormwater master planning process and stormwater rate case.

2:40-3:40pm - Afternoon Break in Exhibit Hall

3:40-4:10pm – How a Stormwater Utility is Helping Bethlehem Township Meet PRP Requirements, Address Long-Delayed Concerns, and Mitigate Flood Risk

Speakers: Bruce Hulshizer and Tyler Erb, both with Herbert, Rowland & Grubic, Inc.

Bethlehem Township is taking a holistic approach to meeting pollution reduction requirements and mitigating flood concerns. Learn how a stormwater utility is helping them take a proactive approach to capital improvement planning, address long-delayed concerns, and share the costs equitably.

4:15-4:45pm – To Be Announced

UTILITY MANAGEMENT PROGRAM

Sustainability, Resiliency & Regulatory Update

Room 109

Moderator: Mark Pickering, GHD

1:00-1:30pm – Waste to Energy Realized: The Great Neck Cogeneration Project

Speaker: Daniel E. Capano, Gannett Fleming Engineers and Architects

The Village of Great Neck, NY, has implemented a novel system of energy recovery that has substantially reduced costs for electricity and will generate a revenue stream from the co-digestion of grease. This presentation will describe project challenges and solutions during construction and return on investment (ROI) from the project.

1:35-2:05pm – Mobile LIDAR and High-Definition Scanning Systems Supports Water Management Infrastructure

Speaker: Joab Carter, PLS, Dawood Engineering, Inc.

Mobile LIDAR and High-Definition survey technologies increase data efficiency, accuracy, and accessibility when encountering challenging site conditions. These scanning tools provide labeled point cloud data—and can be pulled as needed for asset inventories and management, utility identification, engineering designs, and overland water modeling.

2:10-2:40pm – State and Federal Legislation That Could Affect Your Utility Operation

Speaker: Michael Kyle, Lancaster Area Sewer Authority

New legislation and changing regulations can have a significant impact on your utility, affecting your operation, management, and finances. This session will outline current state and federal legislation and regulatory changes, explain the impacts on your utility, and help you become more involved in the legislative and regulatory process.

2:40-3:40pm - Afternoon Break in Exhibit Hall

3:40-4:10pm – 2022 Legal Update for Water Quality Professionals in Pennsylvania

Speaker: Steven Hann, Hamburg, Rubin, Mullin, Maxwell & Lupin, PC

This presentation will examine potential legal issues for water quality professionals, and will cover recent court cases and rulings on regulatory, financial, and operational matters.

4:15-4:45pm – DEP Regulatory Update

Speaker: Jay Patel, PA Department of Environmental Protection

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

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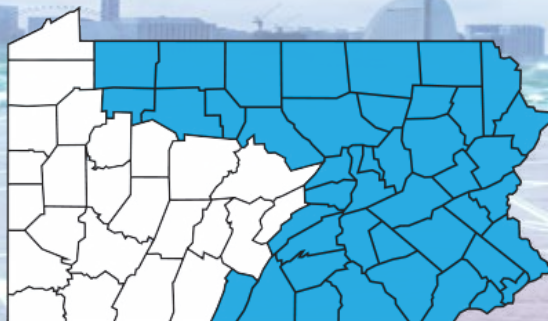
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Technical Program Details

TUESDAY MORNING

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

Exhibiting vendors will make 5-minute presentations about their products or services prior to the half-day Technical Programs.

Collection Systems – Reversing Grinder Pumps in Collection Systems
Presented by Zoeller Engineered Products

Engineering & Construction – Wastewater Engineering for Today
Presented by Pennoni Associates, Inc.

Professional Operators – Top 12 Features Every Scada Platform Must Have

Presented by VTScada by Trihedral

BIOSOLIDS PROGRAM

11:15-11:45am – Mobile Sessions in the 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 couple of years: Mobile Sessions in selected 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.

Meet near the PWEA Registration Desk at 11:00am.

Talking About PFAS Destruction in Sludge
Presented by Veolia Water Technologies

Belt Press Operation on a Working to Scale Model
Presented by Charter Machine Co.

Screw Press Operation and Optimization
Presented by Riordan Materials Corporation

COLLECTION SYSTEMS PROGRAM

System Planning and Operations

Room 207

Moderators: Jeff Cantwell, Flow Assessment Services; and Elizabeth Cheeseman, GHD

8:00-9:40am – FOG Panel

Panelists: Vanessa Nedrick, Remington & Vernick Engineers; Adam Smith, CDM Smith; Mark Wilson, Duperon; Joseph Centrone, DELCORA; and Gus Belmont, Whitpain Township

The management of Fats, Oils and Grease (FOG), flushable wipes and other problematic debris is a major concern in the collection and treatment of wastewater. This panel will present a discussion on the removal of these materials from the source, biological additives to degrade FOG, and physical removal methods.

2:40-3:40pm - Afternoon Break in Exhibit Hall

10:40-11:10am – Validation of the Design Methodology for Pressure Sewer Systems

Speaker: Derek Lachut, Environment One Corporation

Pressure sewers are a viable solution to providing wastewater collection in many communities. Due to the characteristics and operational parameters of pressure sewers, the design methodologies differ markedly from gravity sewers. This presentation provides a summary of the evaluation validating the methodology for pressure sewer designs using the Probability Method.

11:15-11:45am – Rehabilitation Selection and Construction Challenges for Large Diameter Brick Combined Sewers Built in the 1890s

Speaker: Gus O'Leary, Kleinfelder, Inc.

This presentation will detail efforts and lessons learned in cleaning, inspecting, rehabilitation alternatives analysis, and rehabilitation construction for a legacy 85"x90" brick combined sewer interceptor that is part of a wet weather storage system.

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Technical Program Details

ENGINEERING & CONSTRUCTION PROGRAM

Headworks & Primary Treatment

Room 208

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

8:00-8:30am – Why a New 300 MGD Headworks Is Not Just a Wastewater Project – Lessons from Interacting with a Wide Variety of City of Philadelphia and PA State Agencies

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

A new Preliminary Treatment Building will add wet weather capacity of 300 MGD to the Philadelphia NEWPCP. However, to get there the design had to go outside the normal boundaries of the plant to interact with almost every agency in Philadelphia and a few State agencies along the way.

8:35-9:05am – New East Headworks Facility Provides ALCOSAN Additional 300 MGD Wet Weather Treatment Capacity While Sited in Congested Area of Existing Plant

Speakers: Michael Olivier, PE, Whitman, Requardt & Associates, LLP;
and Jeff Argyros, ALCOSAN

New East Headworks facility design provides ALCOSAN 300 MGD of additional wet weather treatment capacity, while considering challenges of adding a major facility within a congested area of the existing plant and careful planning for construction sequencing to maintain plant operation at all times.

9:10-9:40am – Ventilation for Wastewater Facilities and NFPA 820

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

This presentation will provide a basic understanding of how the National Fire Protection Association (NFPA) Standard 820 impacts ventilation and electrical code requirements for wastewater collection, conveyance, and treatment facilities; with an emphasis on the ventilation needs of specific processes and what needs to be accomplished in order to establish the appropriate type of classification for electrical components and controls.

9:40-10:40am - Morning Break in Exhibit Hall

10:40-11:10am – Enhanced Domestic Primary Wastewater Treatment Utilizing Pile Cloth Media Filtration for Operational Savings and Sustainability

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

This presentation will cover advanced primary treatment utilizing pile cloth media filtration versus conventional treatment. The concept and principles of carbon diversion and how the use of pile cloth media filtration allows WRRF's become more energy efficient and self-sustaining.

11:15-11:45am – Shorewood Forest, Valparaiso, IN Wastewater Facility Upgraded for Advanced TSS & Grit Removal

Speaker: Michael Cole, Nexom

The wastewater treatment plant in Valparaiso, IN implemented the EcoBelt™ rotating belt filter to reduce influent TSS and BOD which reduced the load and improved performance of secondary and tertiary processes. This helped the WWTP meet more stringent water quality regulations within both space and budget constraints.

INDUSTRIAL WASTE PRETREATMENT PROGRAM

Room 107

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

8:00-8:30am – Local Limits Re-Evaluations Lessons Learned

Speaker: Nicholas Sahd, Gannett Fleming, Inc.

Municipalities and Authorities with USEPA-approved Industrial Pretreatment Programs are required to impose discharge limits, known as Local Limits, on the industrial wastewater discharged by permitted industrial users within their service area. Based on over two (2) dozen recent local limit re-evaluations, a summary of "lessons learned" will be presented.

8:35-9:05am – Creating and Managing a Fats, Oils, & Grease Program

Speaker: Sam Mcleod, BMP Compliance Group

This presentation will focus on municipal fats, oils, & grease (FOG) programs. We will explore how to create and enforce FOG programs. We will evaluate the relationship between waste haulers, local governments, and restaurants as it pertains to FOG compliance.

9:10-9:40am – Industrial Pretreatment Plant Upgrades

Speaker: David M. Schlott, Jr., PE, ARRO Consulting, Inc.

The presentation will highlight aspects of upgrading the existing pretreatment facilities of a food processing facility located in Lycoming County, Pennsylvania. The facility operates and produces process wastewater continuously with the exception of production shut-downs. The upgrades are proposed in order to meet permit effluent limits and reduce and/or eliminate surcharge fees from the receiving municipal sewer utility.

9:40-10:40am - Morning Break in Exhibit Hall

10:40-11:10am – WET Evaluation Leads to POTW Connection at Recycled Fiber Paperboard Mill

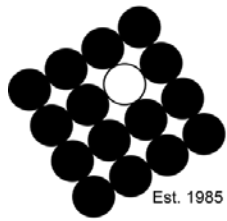
Speaker: Jack Polce, PE, Brown and Caldwell

A recycled paperboard mill was experiencing non-compliance issues related to Whole Effluent Toxicity (WET). The mill owns and operates an onsite treatment plant for treatment of their process wastewater prior to discharging to surface water under a NPDES permit. The wastewater toxicity proved to be complex and the treatment solution costly, therefore the mill elected to provide pretreatment and discharge to the local POTW.

11:15-11:45am – FOG Inspections and Sampling

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

Fats, Oils, and Grease (FOG) is one of the root causes of blockages, backups, sewer system overflows and sewage treatment malfunctions. Grease interceptors and oil/water separators are key in the management of FOG but only if properly maintained. FOG inspections and sampling are instrumental in enforcing compliance.



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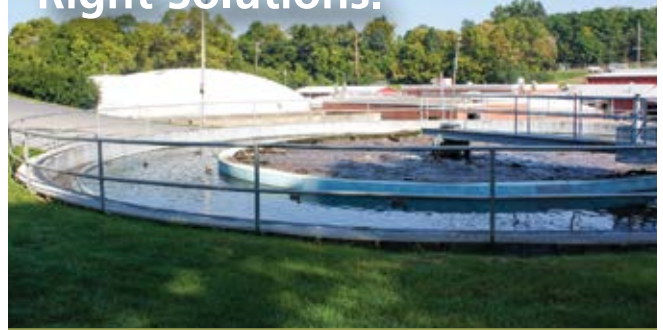
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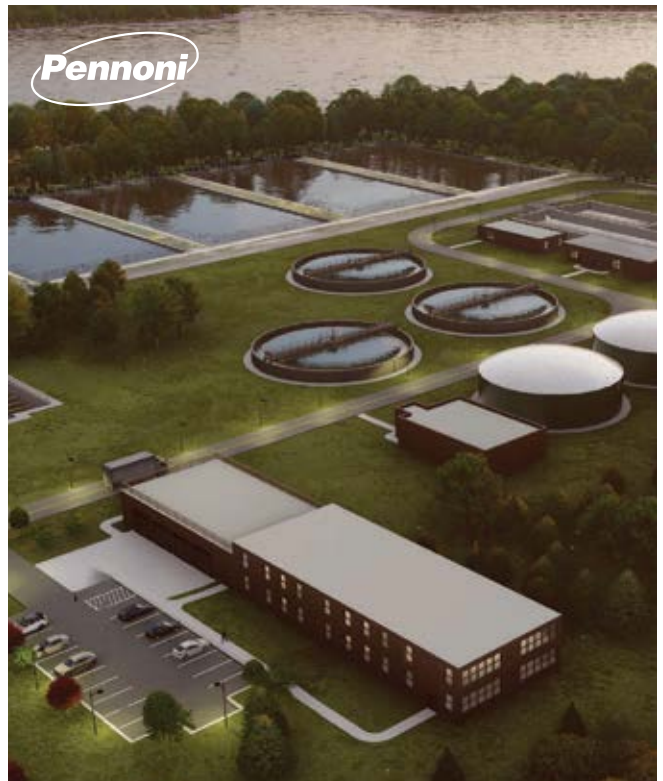
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Technical Program Details

PROFESSIONAL OPERATORS PROGRAM

Room 206

Moderator: Joseph Gianvito, KLH Engineers

8:00-8:30am – Working the Cloud:

GIS Tools for Water Resource Professionals

Speaker: Mark Maguire, GISP, Herbert, Rowland & Grubic, Inc.

This presentation will provide an overview of low-cost GIS cloud solutions for water resource professionals. We will focus on the building blocks of asset management systems for health & safety compliance, PA One-Call documentation, and agency responsiveness related to reporting and technology requirements.

8:35-9:40am – Soft Skills for the Evolving Workforce of the Water and Wastewater Industry - Panel Discussion

Speakers: Autumn Crawford, Western Butler County Authority; Enoch Jenkins, Peters Township Sanitary Authority; and John Larson, Norristown Municipal Waste Authority

Skills related to communication, teamwork, adaptability, work ethic and problem-solving are crucial for an organization's success, so many utilities are dedicating resources to cultivating those skills in their workforce. Panelists will discuss how they assess an individual's soft skills during recruitment and how to cultivate them among existing staff.

9:40-10:40am - Morning Break in Exhibit Hall

10:40-11:10am – NPDES Permits: Trends, Best Practices, and Implications

Speakers: Liz B. Lackey, PE; and Logan Jury, both with Herbert, Rowland & Grubic, Inc.

Current trends show that NPDES permittees are experiencing the addition of metals limits, increased sampling frequency, and additional permit requirements, including WETTs and TREs. This talk will highlight these trends, discuss best practices for NPDES permit applications, detail implications to operations, and review case studies.

11:15-11:45am – Collaborative Public-Private Partnership Brings Affordable Public Sewer Service to Rural Area with Failing On-Lot Septic Systems

Speaker: Justin Mendinsky, PE, Herbert, Rowland & Grubic, Inc.

See how a rural community leveraged interest from developers into a unique public-private partnership for affordable public sewer service. Examine challenges related to funding, design, and construction. See how they constructed a partnership that meets the needs of all parties: the township, its residents, developers, and a neighboring sewer system.

UTILITY MANAGEMENT PROGRAM

Finance and Project Evaluation

Room 109

Moderator: Jack Rae, Gannett Fleming

8:00-8:30am – PENNVEST Financing Water Quality Improvement Projects

Speaker: Tesra Schlupp, PENNVEST

PENNVEST services the communities and citizens of Pennsylvania by funding sewer, stormwater, non-point source and drinking water improvement projects. The primary focus of the presentation will be on PENNVEST funding: the how, what, where, when and why of funding opportunities and funding options – traditional as well as new and innovative ways to fund projects.

8:35-9:05am – Using a Risk Register Approach to Quantify Risk Events and Mitigation Measures for Derry Township Municipal Authority's Biosolids Beneficial Use Program

Speaker: Lisa Challenger, Material Matters, Inc.

Material Matters developed a Risk Register as an innovative approach to identify and quantify risk events associated with DTMA's biosolids beneficial use program based on Level of Service Goals. This presentation will discuss risk register development, including risk identification and scoring methodology, and identification of mitigation measures for risk reduction.

9:10-9:40am – Overhauled: A Guide for Implementing Hauled-In Waste Receiving Improvements

Speaker: Jason VerNooy, GHD

A summary of insights gained from a comprehensive study of the hauled-in waste receiving operations at the 29 mgd Little Patuxent WRP in Maryland and how the findings were applied to develop recommended upgrades for plant-wide benefits.

9:40-10:40am - Morning Break in Exhibit Hall

10:40-11:10am – Planning, Design and Decision Making for the Upgrade of the Lancaster Area Sewer Authority (LASA) Treatment Facility

Speakers: Mark Bottin; Matt Crow; and Micah Blate, all with Hazen and Sawyer

This presentation will provide an overview of the upgrade of LASA's treatment facility and the drivers for each of the project elements. It will highlight project challenges, variables and decisions made that have the biggest influence on the overall scope of the project and the subsequent capital cost.

11:15-11:45am – Energy Recovery Case Study

Speaker: Jess Rosentel, Capital Region Water

Capital Region Water in Harrisburg faces mounting capital improvements needed to minimize Combined Sewer Overflows (CSO) and address decades of deferred maintenance. This presentation will summarize an innovative approach to generating non-rate revenue, through their Energy Recovery Improvements Project, to help fund those capital needs.



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TUESDAY AFTERNOON

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

Exhibiting vendors will make 5-minute presentations about their products or services prior to the half-day Technical Programs.

Drinking Water – New Chlorine Measurement

Presented by Halogen Systems

Engineering & Construction – Achieving High Effluent Quality with a Flat Sheet Membrane Bioreactor

Presented by Kubota Membrane USA Corporation

Industrial Waste Pretreatment – Pump Startup for Self-Priming Chopper Pumps

Presented by KELSO

COLLECTION SYSTEMS PROGRAM

Wet Weather Conveyance and Storage

Room 207

Moderators: Matthew Cichy, Herbert, Rowland & Grubic; and Cheryl Paulin, ADS Environmental Services

1:00-1:30pm – Digital Twinning: Intelligent Collection System Optimization

Speaker: Kevin Flis, Xylem

Any level of digital twin can help inform decision making of the collections system. Outcomes born from this approach can lead to improved use of existing infrastructure that leads to improved wet weather capture for both separated and combined sewer systems, reduced overflows, and characterization of infiltration and inflow.

1:35-2:05pm – Deep Tunnel Pump Stations – Selecting the Right Solution Now, Will Mitigate O&M Problems Later

Speakers: Rich Atoulikian, PE; and Meredith Welle, PE, both with HDR

Many communities are using deep tunnels to capture and store excess CSO or SSO flows for subsequent pumping/treatment. The most common deep pump station configurations are submersible, wet pit/dry pit, and cavern style. This presentation discusses advantages and disadvantages of each, and will present case studies along with lessons learned.

2:10-2:40pm – Using Physical Modeling and BIM to Enhance Design and Operation of a New Deep Tunnel Pump Station for DELCORA

Speakers: Rich Atoulikian, PE, HDR; and Charlie Hurst, PE, DELCORA

DELCORA has embarked on a program to capture wet-weather flows in a tunnel, and route them to a new deep pump station, for delivery to their existing treatment plant. The approach to design, including flow management and debris/grit control will be presented, leveraging results from physical and BIM modeling.

2:40-3:40pm - Afternoon Break in Exhibit Hall

3:40-4:45pm – Great Pump Station Debate

Panelists: Benoit Beaudoin, Maid Labs Technologies; Darrell Kuta, ISCO Flowmeter Products; and Jack Roushey, Siemens Industry, Inc.

Pump stations are critical nodes in any collection system. There is an increasing interest in measuring flow at the pump stations; the interest is often mandated by the PA DEP. OK, so how do we measure flow at the pump station? Three industry experts will debate the merits of flow monitoring technologies and applications.

DRINKING WATER PROGRAM

Room 109

Moderators: Dale Miller; and H David Miller, both with Entech Engineering

1:00-1:30pm – Distribution System Water Quality Improvements with Implementation of Active Tank Mixing

Speaker: Tom Caulfield, UGSI Solutions

This presentation will point to real-world case studies and data that underscore powerful tank mixing as an important and necessary step to water quality improvement and distribution asset protection.

1:35-2:05pm - Active Control of THM Levels in Drinking Water Distribution Systems

Speaker: Tom Caulfield, UGSI Solutions

Elevated trihalomethane (THM) levels are the most common violations of the Stage 2 DBP Rule in the United States. Municipalities across the country have employed a variety of methods to reduce THM formation rates, often incurring high capital and lengthy treatment plant upgrades, which often provide dismal reduction levels.

2:10-2:40pm – Chloramine Disinfectant Residual Optimization and Management in Distribution Systems: Taming the Breakpoint Curve Automatically

Speaker: Tom Caulfield, UGSI Solutions

Some of the largest water utilities in the country have turned to automatic RCS systems to solve their disinfectant residual issues. This presentation will discuss chloramine chemistry, automatic chloramine residual management and use several disinfectant residual management case studies.

2:40-3:40pm - Afternoon Break in Exhibit Hall

3:40-4:10pm – Planning for Upcoming Changes to the Lead and Copper Rule

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

EPA has published Long-Term Revisions to the Lead and Copper Rule (LCR) that will have significant impacts on utilities' compliance efforts. Understanding these changes is critical to planning for and achieving/maintaining compliance with the LCR. This presentation will review the proposed changes and their impact on utility operations.

Technical Program Details

4:15-4:45pm – Conditional Backwash Control with In-Filter Media Level and Turbidity Monitoring – An Optimization Tool for Gravity Filters

Speaker: Michael Emmanuel, ATI-Entech Products/Badger Meter, Inc.

Control of the backwash process in gravity filters is now easily accomplished with an inexpensive combined media-level and turbidity sensor, giving water managers a clear picture of the process like never before. Treatment plant data sets and optimization strategies from across the country will be presented.

ENGINEERING & CONSTRUCTION PROGRAM

Wastewater Process & Technology

Room 208

Moderators: Justin Mendinsky, Herbert, Rowland & Grubic; and Robert Dengler, Gannett Fleming

1:00-1:30pm – Biological Filter Systems to Meet Low Ammonia and Total Nitrogen Limits at Large WWTPs

Speaker: Larry Li, PhD, Veolia Water Technologies

The presentation shares the design, operating experience, performance and lessons learned from various large Biostyr biological filter systems used for secondary/tertiary nitrification and/or denitrification to achieve low ammonia (<0.5 mg/L), total nitrogen (<3 mg/L) and low TSS (<10 mg/L) concentrations at WWTPs in Pennsylvania and the surrounding states.

1:35-2:05pm – Ballasted Flocculation and Clarification for Ultra-low Total Phosphorus Reduction

Speaker: Joshua T. Fox, PE, Herbert, Rowland & Grubic, Inc.

This presentation will review the design, construction, and operation of a ballasted flocculation and clarification tertiary treatment system to achieve total phosphorus effluent limits less than 0.1 mg/L to comply with the Goose Creek TMDL.

2:10-2:40pm – Is Peracetic Acid a Viable Alternative Disinfectant for Wastewater?

Speaker: Michael A. Schober, PE, BCEE, ARRO Consulting, Inc.

Peracetic Acid (PAA) is emerging as a safe and reliable disinfectant for wastewater and stormwater applications. Use of PAA does not form halogenated disinfection byproducts (DBPs) and many WWTP's can be easily retrofitted to use PAA. Because of its wide-spectrum antimicrobial properties, PAA is receiving a lot of attention as an alternative to chlorine and UV.

2:40-3:40pm - Afternoon Break in Exhibit Hall

3:40-4:10pm – It's the Little Things: Efficiently Removing Entities Smaller than the Membrane Pore Size in Microfiltration Membrane Bioreactors

Speaker: Larry Morris, Kubota Membrane USA Corporation

A recent 12-month study has shown that a microfiltration MBR is reliably consistent in removing viruses and coliphages smaller than the membrane pore size. This phenomenon is due to both biofilm and sludge adsorption mechanisms. These results illustrate that MBR performance should not be based solely on pore size.

4:15-4:45pm – Optimizing Design by Implementing Unique Solutions for Large MBR Plants

Speaker: Larry Morris, Kubota Membrane USA Corporation

The purpose of this presentation is to demonstrate unique design solutions for large MBR wastewater treatment plants based on actual design experiences. When implemented, these considerations can present a cost-effective solution while upgrading the treatment technology.

INDUSTRIAL WASTE PRETREATMENT PROGRAM

Room 107

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

1:00-1:30pm – Elements of an Annual Pretreatment Report

Speaker: Jenna M. Bishop, EIT, ARRO Consulting, Inc.

This presentation reviews the requirements to complete the EPA annual pretreatment report required by all POTWs with an approved pretreatment program. The scoring process and common areas of deficiency will be examined to identify areas of improvement for POTWs.

1:30-2:05pm - Do I Need an Industrial Pretreatment Program?

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

How often have you experienced foaming, poor settling, peculiar odors, or any other unexplained anomalies in your wastewater system? Process control errors or changing seasons are not always the culprit. Learn how to better monitor and control waste-stream discharges, which may be affecting your system and its workers.

2:10-2:40pm – MBBR-Based Wastewater Treatment System for Cold Weather Nitrification

Speaker: Siva Angappan, Headworks International, Inc.

A biofilm-based wastewater treatment system was implemented for a mix of municipal wastewater and industrial wastewater in Arkansas. This presentation will describe the project in detail, challenges with cold temperatures, and the advantages of the MBBR process.

2:40-3:40pm - Afternoon Break in Exhibit Hall

3:40-4:10pm – Algae and Phosphorous Removal Using High-Rate DAF Technology and Saving Capital Cost

Speaker: Crystal Brokaw, FRC Systems

Algae growth and phosphorous limits in municipal lagoons are easily mitigated using dissolved air flotation. High-rate DAF installations have consistently achieved sub-permit levels of TP and TSS for a fraction of the cost of a mechanical plant. DAF units require little oversight during operation and are easy to monitor remotely.

4:15-4:45pm – PFAS Regulatory Status Update for Drinking Water and UCMR 5 Update

Speaker: Dr. Kevin W. Custer, Pace Analytical

PFAS in wastewater is a challenging topic in terms of regulation and testing. This presentation will clarify sources and receivers of PFAS contamination, an update on applicable test methods, field sampling guidance, and regulatory updates at the state and federal levels.

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PROFESSIONAL OPERATORS PROGRAM

Room 206

Moderator: Dennis Duryea, Kiski Valley Water Pollution Control Authority

1:00-1:30pm – What You Don't Know Can Hurt You: How to Conduct Internal Investigations and Minimize Liability

Speakers: Stephen Fleury, Jr., Esq., and Kathy Pape, Esq., both with Saxton & Stump

Participants will come away with an understanding of the best practices for responses to alleged discrimination and harassment inside and outside of the workplace. The presentation will equip attendees with the skills to identify issues, understand the process and procedures and conduct objective and thorough investigations to minimize liability.

1:35-2:05pm – 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 220,000+ credits in CY2021. This presentation will discuss the multi-year trends of the program and identify future opportunities for the program— including stormwater trading and enhanced engagement of the agricultural sector.

2:10-2:40pm – Altoona Co-Digestion Project

Speaker: James Balliet, Gwin, Dobson & Foreman, Inc.

The Altoona Water Authority is scheduled to operate a Co-Digestion Facility at the Westerly Wastewater Treatment plant. The \$35 million co-digestion facility will use food waste and municipal biosolids as feedstock to generate biogas and to produce Class A biosolids (via thermal drying) and potentially generate combined heat and power.

2:40-3:40pm - Afternoon Break in Exhibit Hall

3:40-4:10pm – Facility Planning for Nutrient Removal Using Proactive Testing of Emerging Technologies

Speaker: Jacob Metch, PhD, PE, HDR Engineering, Inc.

The Philadelphia Water Department (PWD) is evaluating NH₃-N and total nitrogen removal technologies and proactively testing emerging technologies for long-term facility planning. This presentation will describe PWD's approach in evaluating mobile organic biofilm (MOB) as an emerging technology to meet future effluent requirements.

4:15-4:45pm – Pumping Station Biological FOG Removal Trial and Implementation

Speaker: Adam N. Smith, CDM Smith, Inc.

Suburban Lancaster Sewer Authority (SLSA) has had increasing costs because of FOG, particularly within their pumping stations. To reduce costs, SLSA worked with Kroff Chemical Company to trial a biological additive to degrade FOG within the wastewater. The trial was successful and the full-scale implementation projects to offer some cost savings to SLSA.



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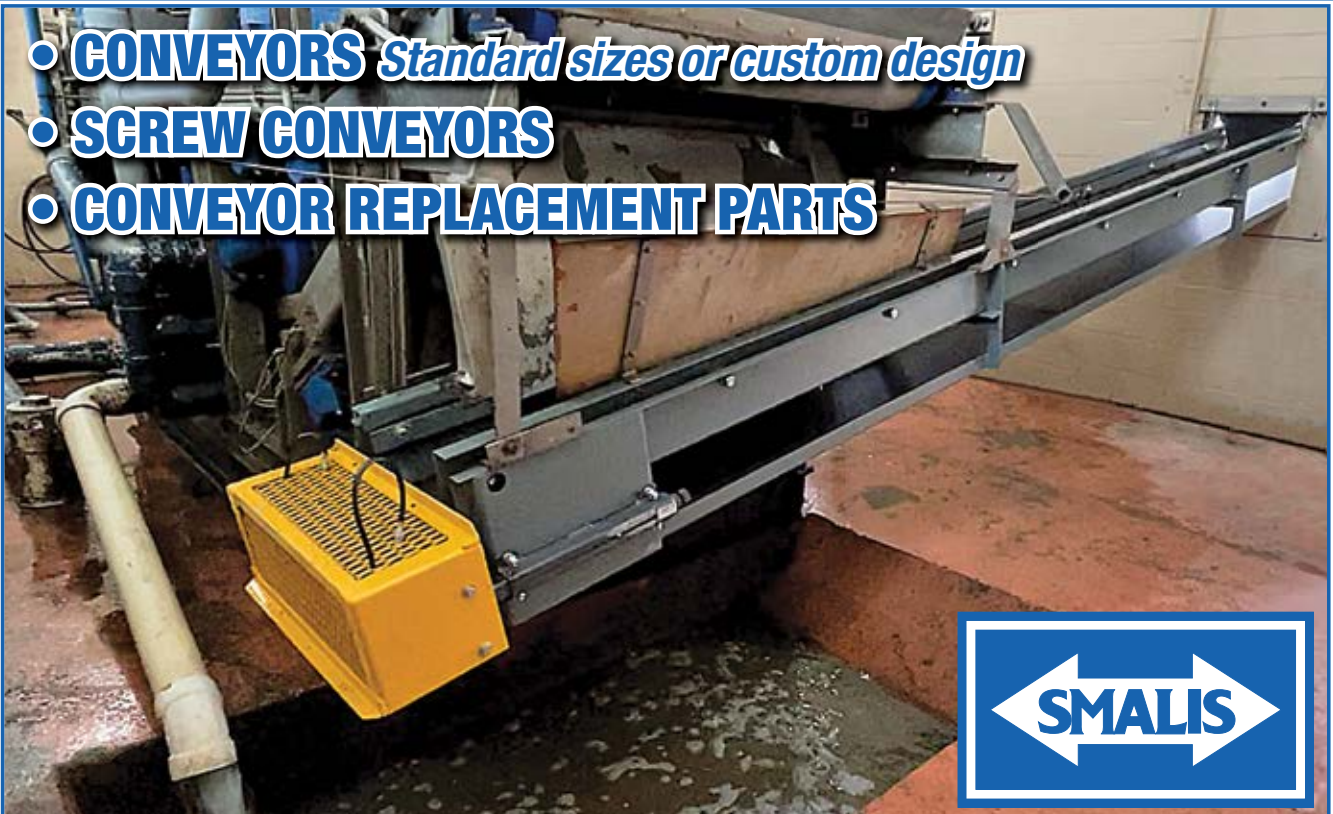
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Technical Program Details

STUDENT RESEARCH PRESENTATIONS

Room 205

Moderator: Holly Frederick, PhD, 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. Oral presentations and poster presentations will be made by the students. See page 58 for the list of presentations.

WEDNESDAY MORNING

ENGINEERING & CONSTRUCTION PROGRAM

Water Treatment & Solids Handling

Room 107

Moderator: Robert Dengler, Gannett Fleming

8:00-8:30am – Could Thermal Processing be the Answer?

**Fundamentals of Pyrolysis, Gasification,
and Incineration**

Speaker: Stanley J Chilson, PE, GHD

This presentation will explain the fundamental differences between, pyrolysis, gasification and incineration in terms of process function, air emission, carbon footprint, final product volume and characteristics, and utilization/disposal options.

8:35-9:05am -- Killing Your Digester: 50 Ways to Do It

Speaker: Keith Albretsen, WesTech Engineering, LLC

Digesters are helping reduce biosolids in plants are serving as energy sources for the plant and their communities. Getting into operation and maintaining operation can be tricky for plants and engineers. This presentation will go through some of the startup and operation failures that WesTech has seen through the decades.

9:10-9:40am – Let Them Make Cake:

Dewatering Case Studies Across PA

Speaker: Tia Trate, Gannett Fleming, Inc.

Wastewater Treatment Operators are frequently looking for effective ways to manage biosolids. Traditional belt filter presses often are difficult to operate and maintain, and produce cake with lower solids concentrations. Gannett Fleming recently designed four solids upgrades for facilities through-out Pennsylvania, two with centrifuges and two with screw presses. This presentation will discuss the equipment selection process, design, and lessons learned.

9:40-10:10pm - Morning Break in Hotel Break Area

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Technical Program Details

10:10-10:40am – Maintaining Safe Water to the City of Newark - Addressing HABs in the Pequannock Watershed with Ultrasonic Technology

Speaker: Felipe Contreras, Kleinfelder, Inc.

This presentation will inform attendees about an ongoing study of the effectiveness of ultrasonic technology to address harmful algae blooms (HABs) in drinking water surface sources and provide implementation lessons learned.

10:45-11:15am – Reaching New Highs: Informing High-Rate Filtration Permits through Piloting

Speaker: Sean McKelvey, Philadelphia Water Department

The Philadelphia Water Department (PWD) has developed a 25-year Water Master Plan to improve water treatment and conveyance. This presentation will overview the proposed expansion of a water treatment plant, benefits and best practices from the pilot study for the proposed expansion, and communication experiences with State Agencies.

SAFETY PROGRAM

Room 109

Moderator: Shane Edge, Whippany Township

8:00-8:30am – Anaerobic Digesters – Optimizing Safety and Operations

Speaker: Matthew Williams, WesTech

Anaerobic Digesters are very common in Pennsylvania, making safe operation very important. Injury, death and damage have occurred as result of operational issues or unexpected events. This presentation will discuss several incidents and provide a review of risks to personnel, structures and equipment and ways to prevent these disasters.

8:35-9:05am – Safety is No Accident -- Pump Station Safety and Design

Speaker: Joe Schmidt, Smith and Loveless, Inc.

Overview of safety in the workplace with emphasis on collection system equipment and PPE (personal protective equipment) that is involved in each activity. New administrators, operators and designers will be presented with how wastewater system design can mitigate safety concerns while still achieving the need for effective and affordable service.

9:10-9:40am – Implementing Your Emergency Response Plan

Speakers: Sydney Jernigan, EIT; and Lyn Rodino, PMP, both with Spotts, Stevens and McCoy

Emergency Response Plans (ERP) are typically forgotten on a shelf and become dusty. Maybe someone brings it out once in five or so years to “update” it. This session is designed to remind attendees the importance of: keeping the ERP current; reviewing and updating it on annual basis; and, most importantly, train and practice the procedures.

9:40-10:10pm - Morning Break in Hotel Break Area

10:10-11:15am – How Much Do You Know About “Confined Spaces”?

Speaker: Kelly Kramer, RETTEW

Every year approximately 100 people die at work entering into confined spaces. This interactive game format will help you learn what confined spaces are, why they are dangerous, common issues and practical solutions. It also includes a review of confined space entry procedures in accordance with the requirements set forth in the Occupational Safety and Health Administration (OSHA) standard 29CFR1910.146 for an entrant, attendant and supervisor who may perform external rescue.



Please be respectful of the presenters and other attendees. Set your cell phone to vibrate or turn it off during conference training sessions, workshops and the Annual Business Meeting. If you see that you're receiving a call, please exit the training or meeting room to accept or return the call. Thank you!



WATER'S WORTH IT.

Student Research Presentations

Tuesday, 1:00-4:45pm - Room 205

The Research Program showcases the ongoing research activities of students (graduate and undergraduate) in the fields of wastewater, water quality, and environmental management relevant to Pennsylvania. The PWEA Research Committee reviews student research abstract submissions from across the region and selects the top abstracts for oral presentation and to receive the Student Research Award. In addition, qualifying abstracts are invited to participate in a Poster Contest at the Conference. After judging by faculty and practicing engineers, the top poster presenters in both undergraduate and graduate categories will be selected. All posters will be available for viewing by Conference attendees. Awards will be presented during the Research Program.

Student Podium Presentations

Title:	Evaluation of Iron-Phosphate Mobility under Anaerobic Conditions in Soil Microcosms
Student:	Benjamin Castillo-Bermudez Penn State University
Advisor:	John Regan
Title:	Carbon Redirection Evaluation and Profiling Function Gene Expression of High-Rate Contact Stabilization Process
Student:	Leiyu He Penn State University
Advisor:	Meng Wang
Title:	BOD and Phosphate Removal Rates of Wastewater Cotreated with Acid-Mine Drainage
Student:	Vittoria LaRosa St. Francis University
Advisor:	Benjamin Roman
Title:	Hybrid Ion Exchange and Biological Processes of Ammonia Removal from Wastewater: Experimental and Modeling Studies
Student:	Tengge Zhang Penn State University
Advisor:	Meng Wang



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 other 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 the monthly PWEA e-Newsletter, keeping you up-to-date on the latest water quality news and PWEA events, which also includes a link to current employment opportunities.

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

Student Poster Presentations

Title:	Understanding Accumulation of Metals In Soils of Green Stormwater Infrastructures
Student:	Bishwodeep Adhikari Penn State University
Advisor:	Lauren McPhillips
Title:	Pennsylvania State of Stormwater Management
Student:	Ian Allison Wilkes University
Advisor:	Holly Frederick
Title:	Impacts of Salt on Nutrient and Metal Removal in Stormwater Bioretention Mesocosms with Varied Vegetation and Soil Saturation
Student:	Alexander Brown Penn State University
Advisor:	Lauren McPhillips
Title:	The Application of Pelletized Duckweed in Limiting Off-Site Nutrient Transport from Agricultural Fields
Student:	Jordon Brown Penn State University
Advisor:	Rachel Brennan
Title:	The Analysis of Antibiotic Resistant Genes in the Raw and Drinking Water of the Schuylkill Watershed
Student:	Abigail Robinson Albright College
Advisor:	Adelle Schade
Title:	Mining Two-Condition Metatranscriptomic Soil Data Studies for Unexpected Insights into Legacy Phosphorus Cycling
Student:	Olivia Rumble Penn State University
Advisor:	John Regan
Title:	Microbial Enhanced Phosphorus Recovery from Wastewater Solids for MAP Production
Student:	John Rybnik Lafayette College
Advisor:	Arthur Kney
Title:	Examining the Impacts of Orthophosphate Corrosion Control on Opportunistic Pathogen Abundance in a Full-scale Drinking Water Distribution System
Student:	Isaiah Spencer-Williams University of Pittsburgh
Advisor:	Sarah Haig
Title:	Internal Water Storage as a Strategy to Maximize Nitrate Removal and Minimize Greenhouse Gas Emissions from Stormwater Treatment Basins
Student:	Tahiya Tarannum Penn State University
Advisor:	Lauren McPhillips
Title:	Stormwater Management Practices for North East PA
Student:	Haley Wallace Wilkes University
Advisor:	Holly Frederick
Title:	Field Investigation of Hydrologic Impacts of Solar Farms in Central Pennsylvania
Student:	Rouhangiz Yavari Penn State University
Advisor:	Lauren McPhillips



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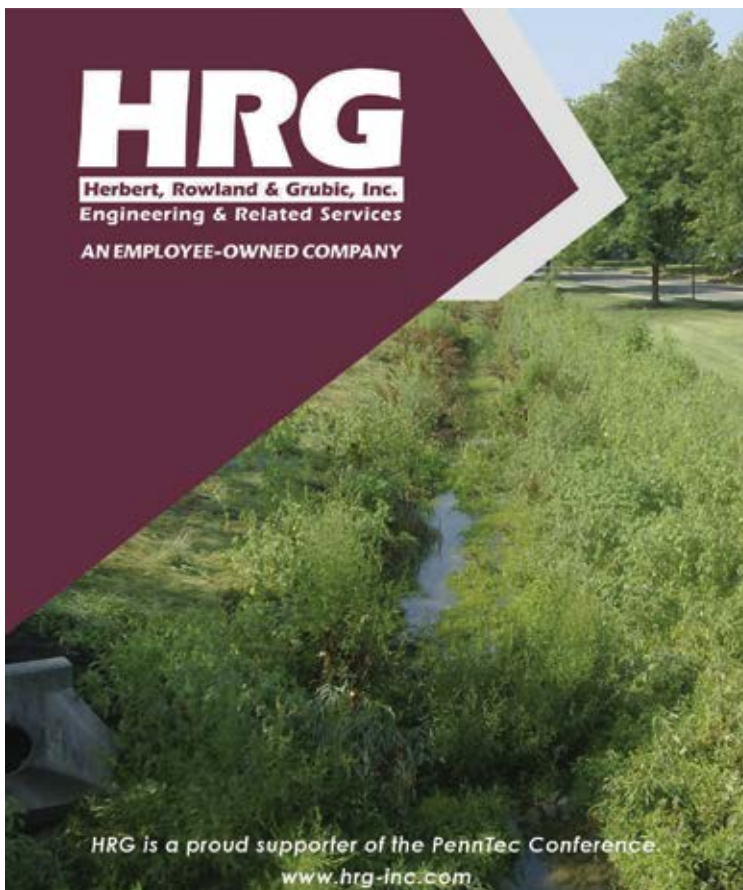
The PWEA App

The PWEA App is available for iPhone and Android users. Visit your App Store and search for the PWEA App. Manage your member account, view Job Postings, view and register for continuing education events and more.



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Did you know the Pennsylvania Water Environment Association is listed as a charitable organization on AmazonSmile? Through this program, PWEA will receive 0.5% of the price of eligible purchases. Go to <https://smile.amazon.com/ch/23-7169337> to start supporting the Pennsylvania Water Environment Association.



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Committees Make It Happen!

PWEA greatly appreciates Members who volunteer to help PWEA achieve its Mission. The PWEA invites Members to contribute their expertise and a small portion of their time to PWEA committee activities. If you would like to participate on any of the committees listed below, email the PWEA Administrative Office (pwea@pwea.org). **Committee “meeting” invitations are sent via email, so it is important for PWEA to have your current email address. Committees meet by conference/virtual call, so no need to travel!**

- | | |
|---|--|
| <ul style="list-style-type: none">• Awards Committee• Biosolids Committee• Collections Systems Committee• Exhibits and Sponsors Committee• Editorial Committee• Engineering & Construction Committee• Industrial Waste/Pretreatment Committee• Government Affairs Committee• Lab Practices Committee• Membership Committee | <ul style="list-style-type: none">• Professional Operators Committee• Public Education Committee• Research Committee• Safety Committee• Social Media Committee• Stormwater Committee• Students and Young Professionals Committee• Training Committee• Utility Management Committee |
|---|--|

Committee Meeting Schedule

All meetings will be held in Gardens Restaurant, unless otherwise noted.

Monday, June 6

7:00am Biosolids Committee
7:00am Engineering & Construction Committee
7:00am Professional Operators Committee
7:00am Training Committee
7:30am Stormwater Committee
7:30am Students & Young Professionals Committee

Tuesday, June 7

7:00am Awards Committee
7:00am Collection Systems Committee
7:00am Laboratory Practices Committee
7:00am Public Education Committee
7:30am Utility Management and Government Affairs Committees

Penn Stater Conference Center Hotel

Due to staffing issues, you may notice changes from previous years at this venue. The hotel will still provide the highest level of service possible, but they are experiencing the same challenges in hiring staff as most of the hospitality industry. Their Banquets Department has been hardest hit.

One of the more obvious changes is that disposable plates, cups, utensils, etc. will be used whenever possible for Conference events. Extra trash bins will be available for convenient disposal of these items. Another change is that bars for Conference receptions will offer beer, wine and soda only—no liquor or mixed drinks. There could also be some delays in service.

The hotel is working with PWEA to minimize any disruptions. PWEA, in turn, wanted to let the PennTec Conference attendees know about this and to ask for your patience and understanding. Thank you.



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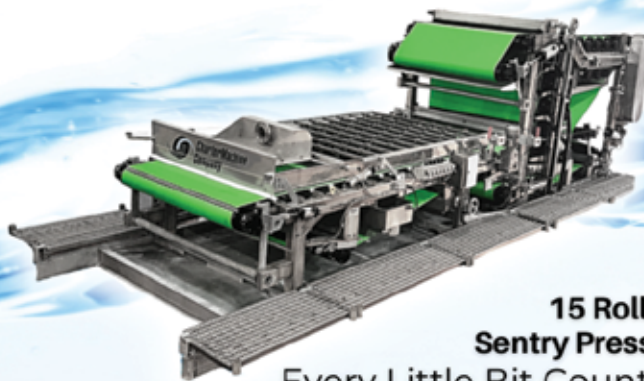
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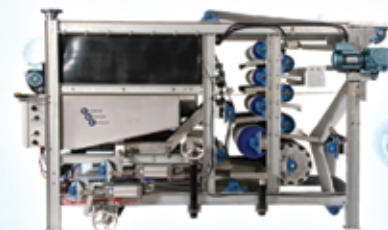
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PA DEP Operator Certification

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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, eight 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 certificates based on the attendance information provided on tracking sheets, which will be available at the Registration Area. Certificates for Professional Engineers, Geologists, Land Surveyors, and other professionals will show 2.5 hours of continuing education per half day program. Time will be earned in half day increments; partial time will not be issued. This time represents actual classroom hours. PWEA will not convert the continuing education time into Professional Development Hours or any other type of continuing education credit. It is the responsibility of each individual to convert those hours and to submit them in the format required by their state licensing boards.

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PennTec 2023 Call for Abstracts

Pennsylvania Water Environment Association
94th Annual Technical Conference & Exhibition (PennTec)
Hershey Lodge & Convention Center
June 18-21, 2023 – Hershey, PA

Technical and case study presentations are the lifeblood of PennTec. If you have some experience in the fields of Biosolids, Collection Systems, Engineering, Construction, Government/Regulatory Affairs, Industrial Waste Treatment, Laboratory Practices, Operations, Safety, Stormwater, or Utility Management, the Pennsylvania Water Environment Association (PWEA) invites you to submit your topic for PennTec 2023.

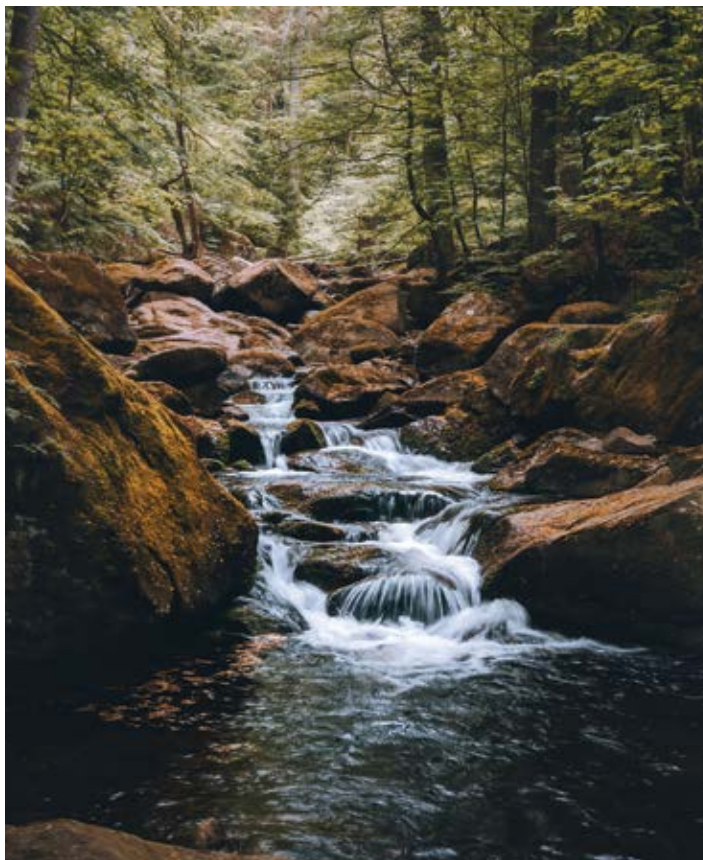
Experience or case studies from some of the smallest municipalities often become the most popular, so please do not think that your project is too small to interest your fellow professionals.

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

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

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

Questions should be directed to abstracts@pwea.org.



Pennsylvania Water
Environment Association


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June 18-21, 2023

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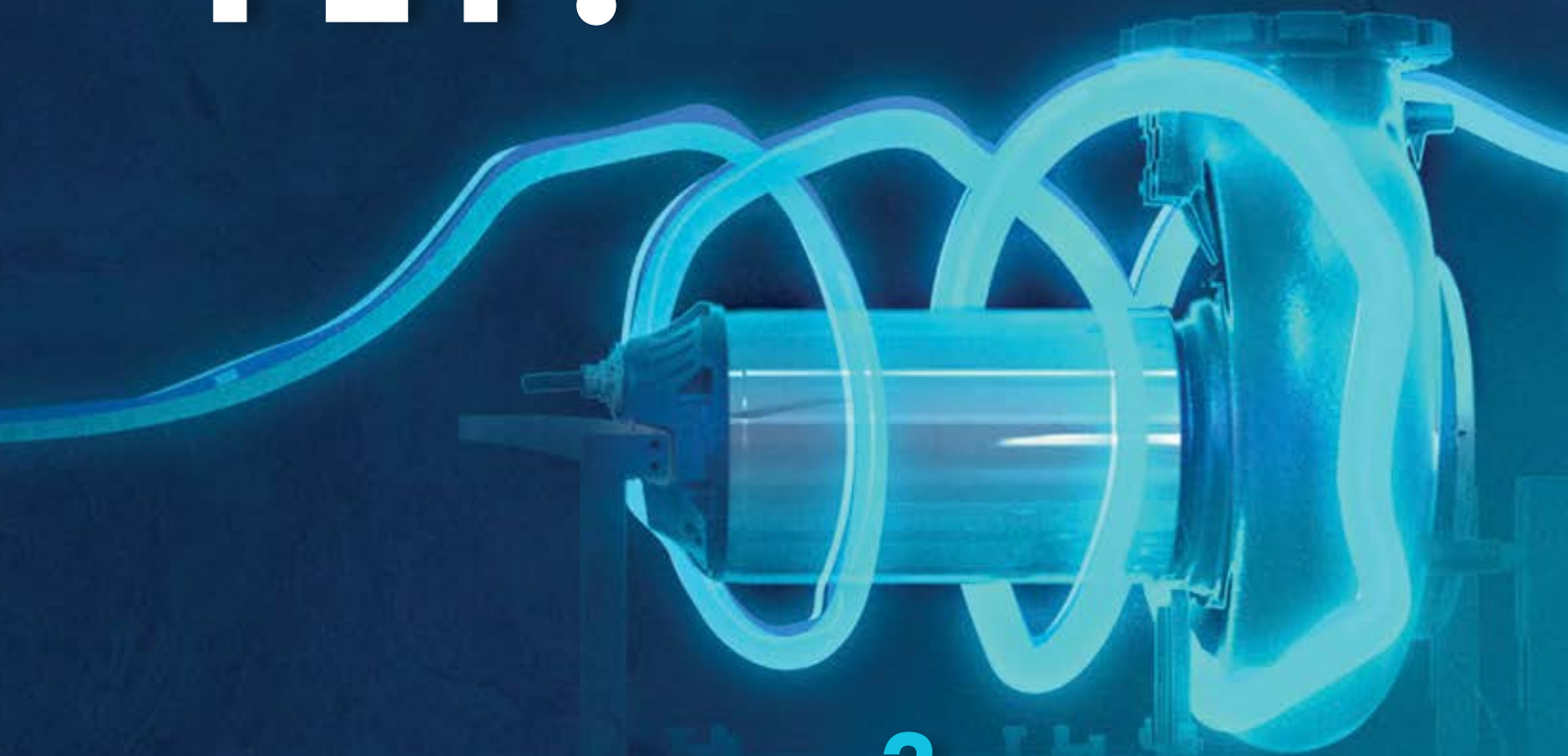
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