

# REGISTRATION PROGRAM

**PennTec**   
**2017** 89<sup>th</sup> Annual Technical  
Conference & Exhibition

**June 4-7, 2017**

**Kalahari Resort & Convention Center  
Pocono Manor, PA**

Follow PWEA   

# CONFERENCE AT A GLANCE

(as of February 1, 2017)

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

## Sunday, June 4

9:00am-3:00pm Golf Tournament  
3:00-5:00pm Registration Open

## Monday, June 5

7:30am-5:30pm Registration Open  
8:00-9:00am Continental Breakfast in Exhibit Hall  
8:00am-5:30pm Exhibit Hall Open  
9:00-11:45am Morning Technical Programs  
*Biosolids*  
*Collection Systems*  
*Engineering*  
*Utility Management*  
**Workshops**  
8:00am-5:30pm *Activated Sludge Refresher Course (Day 1)*  
8:45am-12:00pm *Permit Required Confined Space Awareness/Excavation and Trenching Awareness*  
9:00am-4:30pm *Industrial Inspections 360*  
11:45am-1:00pm Complimentary Lunch in Exhibit Hall  
12:30-1:00pm Annual Business Meeting with Dessert & Coffee  
1:00-3:30pm PWO Plant Tour  
1:00-4:30pm Afternoon Technical Programs  
*Biosolids*  
*Collection Systems*  
*Engineering*  
*Utility Management*  
2:30-3:30pm Break Refreshments in Exhibit Hall  
4:30-5:30pm President's Reception in Exhibit Hall  
6:00-9:00pm Annual PWEA Awards Ceremony & Annual Dinner

## Tuesday, June 6

7:00-8:30am Continental Breakfast in Exhibit Hall  
7:00am-5:30pm Registration Open  
7:00am-5:30pm Exhibit Hall Open  
8:00-11:30am Morning Technical Programs  
*Collection Systems*  
*Engineering*  
*Industrial Pretreatment*  
*Stormwater*  
8:00-11:30am Students & Young Professionals Program  
**Workshops**  
8:00-11:45am *Laboratory Ethics*  
8:00am-4:30pm *Wastewater Professionals Guide to Online Process Instrumentation for Biological Nutrient Removal Activated Sludge Monitoring*  
8:00am-5:30pm *Activated Sludge Refresher Course (Day 2)*  
9:00am-12:00pm Operations Challenge  
9:30-10:30am Break Refreshments in Exhibit Hall  
11:30am-1:00pm Complimentary Lunch in Exhibit Hall  
12:30-1:30pm SYP Career Fair  
1:00-4:30pm Afternoon Technical Programs  
*Collection Systems*  
*Construction*  
*Finance*  
*Industrial Pretreatment*  
1:00-4:30pm Student Research Program & Poster Contest  
2:30-3:30pm Break Refreshments in Exhibit Hall  
4:30-5:30pm Beer & Pretzels Reception in Exhibit Hall  
Operator Olympics in Exhibit Hall  
6:00-9:00pm "Raise Your Glass" - A Wine Tasting Event

## Wednesday, June 7

7:00-8:30am Continental Breakfast  
7:00am-12:00pm Registration Open  
8:00-11:00am Morning Technical Programs  
*Professional Wastewater Operations*  
*Water Sustainability & Reuse*  
**Workshop**  
8:00am-12:00pm *Responsibilities of Clean Water Professionals*  
9:30-10:00am Break Refreshments  
11:30am Conference Concludes



## Consent for Use of Photographic Images

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

## A Message from the PWEA President and the Conference Committee Chair

On behalf of the PWEA Board of Directors and the 2017 Conference Committee, we invite you to attend PWEA's 89th Annual Technical Conference and Exhibition (PennTec 2017) on June 4-7 at the Kalahari Resort & Convention Center in Pocono Manor, 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 15.5 DEP contact hours, or up to 18.5 Professional Development 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 networking opportunities for you to meet and interact with your colleagues. The President's Reception will be in the Exhibit Hall on Monday evening. The Annual PWEA Dinner and Awards Ceremony will be held on Monday night. The Beer & Pretzels Reception and the "Raise Your Glass" Wine Tasting Event are on Tuesday.

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



*Michael Sedon*  
Chair, PennTec 2017  
Conference Committee



*Larry Fair*  
PWEA President

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## GENERAL INFORMATION

### Conference Registration

Registration is available for the full Conference or at the daily rate. **See the chart below for a list of what is included with your registration fee.** Access to the Exhibit Hall is included for the day(s) covered by your registration. You must be a member of PWEA or WEF/PWEA to qualify for Member rates. Go to page 19 for the registration form.

### Registration Confirmation

Confirmations will be sent by email. Please be sure to include your email address on your registration form.

### Online Registration

To register online, go to [www.pwea.org](http://www.pwea.org), click Event Registration under the Calendar tab, then click the Register link to go to our secure website.

### Spouse/Life Partner Registration

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

### College Students

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

### Cancellation/Substitution Policy

No refunds granted after April 30th. A \$50 cancellation fee will be assessed on all refund requests received by April 30th. All refunds must be requested in writing. Substitutions are permitted with a \$25 per person substitution fee. Substitutions may be made until May 15th and must be made in writing, accompanied by a new registration form. Substitutions may not be made on-site.

### Badges

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

### Wireless Internet Service

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

### Exhibit Hall Access

The Exhibit Hall is open to all registered attendees and registered vendor representatives. Exhibit Hall monitors will be checking to make sure everyone is wearing the correct 2017 Conference name badge and lanyard.

## WHAT'S INCLUDED IN YOUR CONFERENCE REGISTRATION?

	Regular Conference Sessions	Monday Exhibit Hall; Continental Breakfast; Breaks; Lunch; President's Reception	Monday Plant Tour	Monday Annual Dinner	Tuesday Exhibit Hall; Continental Breakfast; Breaks; Lunch; Reception	Tuesday YP Social Event	Wednesday Continental Breakfast; Break	Workshops
Full Conference	Yes	Yes	No	Discounted	Yes	No	Yes	Yes
Monday only	Yes	Yes	No	No	No	No	No	No
Monday only, YPs	Yes	Yes	Yes	No	No	No	No	No
Tuesday only	Yes	No	No	No	Yes	No	No	No
Tuesday only, YPs	Yes	No	No	No	Yes	Yes	No	No
Wednesday only	Yes	No	No	No	No	No	Yes	No
Spouse/ Life Partner Registration	No	Yes	No	No	Yes	No	Yes	No

## Early Registration Discount

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



## HOTEL ACCOMMODATIONS



### Kalahari Resort & Convention Center 250 Kalahari Blvd, Pocono Manor, PA 18349

A block of rooms has been reserved at the Kalahari for PennTec 2017. Rooms in the block will be available beginning February 13th.

Reservations must be made by May 11, 2017. Rooms may not be available after this date. The discounted room rates are as follows:

\$169.00 per Room/Single, Double, Triple, or Quad *(for Sunday, Monday, and Tuesday nights)*

\$249.00 per Room/Single, Double, Triple, or Quad *(for Saturday night)*

Rates include overnight accommodations and up to four waterpark passes per room. All rooms are non-smoking.

Call Reservations at 1-877-525-2427 and mention Group Booking ID 17 or PennTec 2017 to receive the discounted rate.



## CERTIFICATION

### PA DEP Operator Certification

The PA Department of Environmental Protection (PA DEP) has approved permanent continuing education status for the PWEA Annual Conference. The Conference is being planned in accordance to the requirements of House Bill 183 (Act 11) and application has been approved to provide five (5) contact hours to eligible wastewater operators. The PWEA is a PA DEP accredited sponsor and is permitted to issue continuing education credits to water and wastewater operators.

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

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

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

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

In addition to the Conference contact hours, six workshops have been approved by the PA DEP for additional credit. Go to pages 16-17 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

PWEA technical sessions are not pre-approved by the State Registration Board. Therefore, it is not possible to guarantee their acceptance for certification purposes. PWEA will issue an attendance certificate provided you submit a tracking sheet which will be available at the Registration Area. PE's, LS's and Geologists earn 3 Professional Development Hours (PDH) per half day session.

### Other Certification

At this time, the PWEA cannot provide continuing education certification for anyone other than PA DEP water and wastewater operators. However, Certificates of Attendance can be prepared and mailed upon request. It is your responsibility to check with your certification board to determine whether this type of certificate is acceptable.

## STUDENTS & YOUNG PROFESSIONALS

The Pennsylvania Water Environment Association would like to offer a special invitation to **Students & Young Professionals (SYPs) thinking about coming to PennTec 2017**. SYPs have been participating in a number of social and service events over the years and are aiming to continue building the program. The SYP Committee is looking forward to seeing you at PennTec.

**A special registration category is available for Young Professionals (YPs) who wish to attend the Conference on Monday or Tuesday.** The discounted YP fee includes access to the Exhibit Hall and regular educational Conference sessions, plus continental breakfast, breaks and lunch. This registration also includes a ticket for the Plant Tour on Monday or a ticket for the "Raise Your Glass" Wine Tasting Event on Tuesday. The chart on page 4 outlines everything included. The registration form is on page 19. Driver's license ID is required when you check in on-site.

**Again this year** - the SYP Committee will host a Career Fair. See below for details.

**The YP Committee is planning the Tuesday Night Event** and we invite you to stick around and join our new Wine Tasting Event. Hors d'oeuvres and beverages will be available. See details on page 18.

**On the Conference registration form, there is a box that you can check indicating if you are age 35 or younger.** You will be given a colored lanyard designating your YP status.

The SYP Committee has a number of events planned for 2017 and is looking forward to your participation.

*Steve Kestel*

SYP Committee Co-Chair

*Chase Kelch*

SYP Committee Co-Chair

### SYP Career Fair

*Tuesday, 12:45-2:45pm*



The SYP Committee will be hosting a Career Fair to provide an opportunity for young professionals to meet prospective employers in the water/wastewater sector. The event will kick off with a short presentation from a senior member of PWEA who will discuss the status of the industry and employment opportunities, followed by short presentations from employers in the various aspects of the industry, and open time for prospective employees to talk with employers in attendance.

Participating companies/organizations (engineering firms, consultants, wastewater reclamation facilities, Municipalities, Authorities, etc.) will have the opportunity to meet with students/job seekers and interested YPs. Flyers will be sent to Pennsylvania Universities and Colleges to provide information about the event. Students will be instructed to sign up prior to the event and to bring copies of their resume to the event. Companies interested in participating in the Career Fair can register online at [www.pwea.org](http://www.pwea.org), or they can contact Chase Kelch via email [ckelch@larsondesigngroup.com](mailto:ckelch@larsondesigngroup.com).

## STUDENTS & YOUNG PROFESSIONALS PROGRAM

### Tuesday, 8:00-11:30am – Kalahari's Indoor Waterpark – Project Challenges and Facility Tour

Kalahari Resorts & Conventions featured a 100,000 square foot indoor waterpark after Phase 1 was completed. Phase 2 of the project will be completed by the time PennTec 2017 begins. This will add another 120,000 square feet of indoor waterpark space, making it the largest indoor waterpark in America. Join the Students and Young Professionals Committee as we examine the challenges associated with making a project of this magnitude come together. The General Manager of the resort, as well as the waterpark Maintenance Supervisor, will partner to present their perspective on the day-to-day operation of the facility. After the presentation, small groups will be taken on a guided tour of the facility.

## SPECIAL EVENTS



### Annual PWEA Golf Tournament Sunday, 9:00am

Join your colleagues for a friendly game of golf! The tournament will be held at the Inn at Pocono Manor Golf Course, about 5 minutes from the hotel. Refreshments and prizes will be provided. Net proceeds from the golf tournament will benefit PWEA's Operations Challenge Program.

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

Cost is \$90 per person (or \$340 per foursome), and includes greens fee, golf cart, lunch and refreshments. Pre-registration is required. You must register by May 15th; on-site registration is not available for this event. Appropriate golf attire is required.



### PWO Plant Tour Brodhead Creek Waste Water Treatment Plant East Stroudsburg, PA Monday, 1:00-3:30pm

As of March 2011, BCRA began ownership and operation of the former Stroudsburg sewer plant and serves the Borough of Stroudsburg, Stroud Township, Pocono Township, Hamilton Township and Tobyhanna Township (where the Kalahari Resort is located). Approximately \$40 million dollars has been spent to upgrade the wastewater facility to handle growth and greatly improve the quality of water being released back into the watershed. BCRA is a non-profit entity responsible only for the operation of the wastewater plant. The municipalities served by BCRA own and operate their own collection systems (pumping stations, distribution pipes, etc.).

Be sure to register in advance in order to reserve your seat on the bus. A limited number of tickets may be available on-site. The cost is \$20 per person. Bus will begin boarding at 12:30pm and will depart at 12:45pm.

## EXHIBIT HALL

The Exhibit Hall is a very important part of the PennTec Conference. The exhibits will open on Monday at 8:00am and will close on Tuesday at 5:30pm. Visiting the vendors will be informational, educational, and it will also be fun!

### Raffle Prizes

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



### New for 2017 - Exhibit Hall Biosolids Bingo

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

#### How it Works:

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

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

Prizes will be awarded during the last Exhibit Hall break on Monday and on Tuesday.



# TECHNICAL PROGRAM DETAILS

## MONDAY MORNING

### BIOSOLIDS PROGRAM

*Moderators: Stefan Weaver, Material Matters, Inc., and Jason Wert, RETTEW*

#### **9:00-9:30am – Two Stage Thermal Oxidization: A Cost-Effective, Environmentally Sound Alternative for Bioenergy Recovery from Multiple Hearth Furnaces**

*Speaker: Stan Chilson, PE, GHD Inc.*

Delaware County Regional Water Quality Control Authority (DELCORA) operates two, 48 dry tons/day (dt/d), Multiple Hearth Furnace (MHF) based thermal oxidization systems. Facing pending EPA MACT Standards and capacity concerns DELCORA/GHD developed a biosolids handling alternatives evaluation in 2011. This study reaffirmed the advantages of combustion and recommended the installation of an innovative two-stage thermal oxidation system.

#### **9:30-10:00am – Existing Infrastructure Provides Solution for Solids Handling Improvements**

*Speaker: Trudy Johnston, Material Matters, Inc.*

This presentation discusses the methodology, process, and rationale for the Borough of Carlisle's biosolids processing and management evaluation. The evaluation investigated alternative treatment processes to replace the Borough's 40 year old lime slurry stabilization process. The project objectives focused on cost, public perception, reliability, and staffing requirements with an emphasis on maximizing existing equipment and tanks.

#### **10:00-10:30am – Belt Dryer Performance Evaluation: Is the Bang Worth the Buck?**

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

The Milton Regional Sewer Authority recently installed a new belt dryer designed to produce Class A biosolids from the processing of dewatered waste activated and waste anaerobic sludge. This presentation will detail the dryer's performance, costs of operation and summarize process variability including impacts of sludge feedstock type, dewatering system equipment and generator operations.

#### **10:45-11:15am – Molybdenum Pretreatment Pass Through into Effluent and Solids**

*Speaker: Aaron Stephens, Material Matters, Inc.*

When molybdenum-laden waste is received as part of a hauled-waste program, the impact on both a pretreatment plant and the subsequent municipal wastewater treatment plant is enormous. Molybdenum concentration peaked at more than twice the allowable ceiling concentration (EPA 503 Table 1), causing land application to be out of commission until a detailed investigation was completed.

#### **11:15-11:45am – Case Study on Molybdenum Contamination (Part 2)**

*Speaker: Randall G. Hurst, Mette Evans & Woodside*

In companion to the prior presentation, this case study will investigate the legal challenges related to the impact of high concentration molybdenum waste received as part of a hauled-waste program.

## COLLECTION SYSTEMS PROGRAM

*Moderators: Ed Woyden, Gannett Fleming, and Bruce Hulshizer, Herbert, Rowland & Grubic, Inc.*

#### **9:00-9:30am – Overview of Lateral and Main/Lateral Connection Lining and Sealing Technologies**

*Speaker: Ted DeBoda, NASSCO*

Plumbing codes often do not specify the use of trenchless technologies for sewer lateral rehabilitation as an alternative to open-cut excavation. This presentation will discuss the technical document developed by NASSCO's Lateral Committee for advancing the acceptance of trenchless technologies for sewer lateral rehabilitation.

#### **9:30-10:00am – Sewer Lateral Rehabilitation: Methods, Issues and Lessons Learned**

*Speaker: Anthony Dill, Arcadis*

This presentation provides an overview of the basics of sewer lateral rehabilitation for reducing infiltration emphasizing successful sewer grouting approaches. It will also share lessons learned from lateral rehabilitation programs, documented I&I reductions, and importance of post-construction inspections.

#### **10:00-10:30am – Successful Sewer Lateral Easement Acquisition Strategy**

*Speaker: Daniel Slagle, Nichols & Slagle Engineering*

A point-by-point discussion on securing sewer lateral easements, negotiating techniques do's and don'ts, and the pitfalls of condemnation will be presented.

#### **10:45-11:15am – Cross-Bores in Pennsylvania**

*Speaker: Michael Kyle and Eric Swartley, both with Lancaster Area Sewer Authority*

The presentation will provide an understanding of cross-bores including a description of how cross-bores are developed, the risks they present, and efforts underway in Pennsylvania to enhance public safety as it relates to mitigating legacy cross bores.

#### **11:15-11:45am – The Benefits of Sewer Lateral Inspections**

*Speaker: Albert Knepp, Lancaster Area Sewer Authority*

This presentation will provide an on-site demonstration of sewer lateral launch capabilities of closed-circuit television inspection equipment. The presentation will discuss the need for sewer lateral inspection data as part of sewer rehabilitation programs and prior to construction of other utilities installed using trenchless methods.

## ENGINEERING PROGRAM

*Moderator: Justin Mendinsky, Herbert, Rowland & Grubic, Inc.*

#### **9:00-9:30am – How to Reduce Pumping Cost**

*Speaker: Sami Sarrouh, PE, T&M Associates*

Software exists to address system optimization to reduce energy consumption. Yet, depending on the size and specifics of the water system, there may be little payback on investment. As a low-cost alternative, a number of easy-to-follow hydraulic operating procedures were developed/tested by the author. This presentation will discuss the approach.

#### **9:30-10:00am – Practical Applications of Value Engineering in Wastewater and Drinking Water**

*Speaker: James J. Rhoades, Jr., PE, AVS, Alfred Benesch & Company*

Value engineering (VE) is a systematic, structured approach for improving projects and processes. Presentation includes SAVE International standard methodology and its application to real-life projects. Case studies address alternative analysis and selection for various project aspects, including treatment process selection, equipment selection, building planning/programming, and operations and maintenance processes.



# TECHNICAL PROGRAM DETAILS

## 10:00-10:30am – Equipment Pre-Select, the Process, When and How

*Speaker: Terry M. Gellner, PE, TnT Engineering LLC*

Many of today's technologies to achieve more stringent effluent limits or to optimize system operations have more differences than similarities. When should the Owner choose the technology to cost effectively implement a project and how should the technology be secured? Equipment pre-selection and procurement are methods which assist the Owner.

## 10:45-11:15am – Better Projects through Operator Participation

*Speaker: Jerry Haimowitz, PE, GPM Associates, an Advanced Geoservices Company*

Learn how to design the best possible project at the lowest possible cost through operator participation. Only by operating and repairing systems every day does one learn how they fail and how they can be improved. Examples show how to utilize operator experience into your design team.

## 11:15-11:45am – The Use of Micro-Tunneling Construction to Install Sanitary Sewer Main Under Challenging Site Conditions

*Speaker: Mark Ambrose, PE, T&M Associates*

Pocono Township faced a unique predicament when, during the installation of a gravity sewer pipeline, unsuitable, challenging geological conditions resulted in 'humps' in the piping—creating a 'hydraulic bottleneck.' In utilizing micro-tunneling construction to install a new sewer main, the problem was corrected and financial, operational and customer crises thwarted.

### UTILITY MANAGEMENT PROGRAM

*Moderator: Mark Pickering, GHD*

## 9:00-9:30am – GIS Mapping on a Budget

*Speaker: Britney Vazquez, U.S. Environmental Protection Agency*

EPA Region 3's GIS Mapping Program aims to provide water utilities FREE technical assistance with FREE online software and FREE loaner GPS handheld devices. GIS mapping is a key part of an asset management program, which helps utilities plan for rehabilitation or replacement of important components before an unexpected failure.

## 9:30-10:00am – Simplified Asset Management with Wireless Data Acquisition and Monitoring System

*Speaker: Nick Scarpa, Nebula NJ, LLC*

The benefits of automatic collection of key performance data from utility equipment will be demonstrated. Attendees will learn how elimination of manual data collection will not only greatly reduce operating costs but will also have significant impact on operational efficiency.

## 10:00-10:30am – Going Mobile - GIS Asset Management

*Speaker: James P. Meisenbach, RETTEW*

Using a mobile GIS can make keeping track of your underground utilities easy and accessible. The presentation will focus on those benefits using a local water company's application as an example, and how this same process can be utilized for a wastewater system.

## 10:45-11:15am – Leveraging Mobile and GIS Technology to Support Asset Management and Systems Planning

*Speaker: Jayson Brennen, CDM Smith*

In today's technology-driven mobile world, utility professionals are increasingly looking to obtain immediate access to critical utility information to support asset management and systems operations. During this presentation, case studies outlining how GIS and mobile-based technology tools can be used to support effective asset management will be presented and demonstrated.

## 11:15-11:45am – Online GIS Applications: A Low-Cost Asset Management Approach

*Speaker: Alfred Guisepppe, SSM Group Inc.*

This presentation will provide real-world water/wastewater system examples that use online GIS applications to transform infrastructure data into low-cost, secure, and easy-to-use asset management system. Through customized mobile web applications, field-critical data is available when needed most and accessible to operators and managers in the office or in the field

### MONDAY AFTERNOON

#### BIOSOLIDS PROGRAM

*Moderators: Stefan Weaver, Material Matters, Inc., and Jason Wert, RETTEW*

## 1:00-1:30pm – Not All Dryer Products are Created Equal

*Speaker: Lisa Boudeman, Material Matters, Inc.*

This presentation will discuss case studies in which utilities selected biosolids dryers either with or without consideration of the generated product's characteristics. The influence of upstream processing on dryer operations and dried product's characteristics will be presented. The process for selecting a dryer that will meet a utility's goals will be introduced.

## 1:30-2:00pm – Exploring New Approaches to Measuring Biosolids Stability

*Speaker: Malcolm Taylor, Penn State University*

The Oxitop® system provides an inexpensive and rapid assessment of respiratory activity. This study evaluates the potential of Oxitop® as an indicator of biosolids stability. Respiratory activity measurements are compared to observed odor thresholds to evaluate the potential of the Oxitop® system as a predictor of biosolids odor.

## 2:00-2:30pm – Biogas Utilization Alternatives

*Speaker: Micah Blate, Hazen and Sawyer*

This project included evaluating biogas utilization alternatives such as CHP, CNG, and pipeline injection. Anaerobic digesters were evaluated under existing conditions as well as future conditions based upon population growth projections. Additionally, co-digestion of HSW based upon available capacity in the digesters and potential increases in biogas production was evaluated.

## 3:30-4:00pm – Screw Press for Sludge Dewatering – The Real World Experience of a New Installation

*Speaker: Eric Lindhult, PE, Upper Merland-Hatboro Joint Sewer Authority*

A Schwing Screw Press was installed to replace an aging filter press. The solids content increased from ~17% to 25%. Many issues were discovered and resolved during the startup of this first of its kind system in Pennsylvania. Anticipated benefits include increase reliability, solids content, and energy savings.

## 4:00-4:30pm – Technical Study on Maximizing Polymer Efficiency for Improved Sludge Dewatering

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

This presentation demonstrates how good understanding of polymer science and fluid dynamics helps in designing better mixing equipment to maximize the effectiveness of polymeric flocculants. Laboratory testing and field evaluations at water and wastewater treatment plants confirmed that well-designed polymer mixing equipment alone could improve the dewatering process efficiency significantly.

# TECHNICAL PROGRAM DETAILS

## COLLECTION SYSTEMS PROGRAM

Moderators: Chris Patackis, Brown and Caldwell, and Tony Dill, ARCADIS

### 1:00-1:30pm – The University Area Joint Authority's 18.8 MGD Big Hollow Diversion Pump Station: Project Review

Speaker: Benjamin R. Burns, Herbert, Rowland & Grubic, Inc.

The Big Hollow Pump Station was constructed to provide future flow capacity and eliminate environmental issues by removing a section of interceptor installed at ground level. The pump station incorporates a diversion pumping system with a second forcemain to pump flows around hydraulically limited segments of an interceptor.

### 1:30-2:00pm – More Connections = Less Wastewater Flows - The NBCJMA Story

Speaker: Edward L. Woyden, Gannett Fleming, Inc.

The Newtown, Bucks County, Joint Municipal Authority in suburban Philadelphia has developed a flow reduction program that has resulted in over 1300 EDUs connected since 2003 with a net reduction in AADF. The Authority's program of I/I reduction, metering, grouting and standard spec revisions is presented as an example for others.

### 2:00-2:30pm – From Collapse to Completion, a Case Study of an Authority's Proactive Pipe Lining Program

Speaker: Adam N. Smith, PE, CDM Smith

After three sewer collapses in an 18-month period, the Suburban Lancaster Sewer Authority established a proactive approach to rehabilitate one-third of its sewer system using trenchless technologies. This presentation will review the overall repair program and the transition from retroactive to proactive solutions in four days.

### 3:30-4:00pm – When Simpler Is Better: Creating an Asset Management System People Will Use

Speaker: Bryon Killian, PE, Entech Engineering, Inc.

One of a utility's biggest struggles is how to manage information, in particular, relevant information regarding components of their infrastructure. A simple solution that was extremely user-friendly was crafted for a Pennsylvania Sanitary Authority, making valuable, up-to-date information about all assets in the system available to everyone at the Authority.

### 4:00-4:30pm – It's the Law in Massachusetts: You Must Maintain an I/I Program

Speaker: Kevin Brander, Massachusetts Department of Environmental Protection

Based on regulations amended in 2014, all communities in the State of MA must have an infiltration/inflow program by December 31, 2017. The program parameters are well defined by strategy and tactics. One of the important goals of the new regulation is to provide a means for upstream communities to share responsibility for common collection systems.

## ENGINEERING PROGRAM

Moderator: Justin Mendinsky, Herbert, Rowland & Grubic, Inc.

### 1:00-1:30pm – Deploying Innovative Odor Reduction Technologies

Speaker: Renato Contipelli, quasar energy group

In this presentation, quasar will present an odor study and the results associated with deploying these technologies at digester systems in various locations. Innovative approaches and technologies include new patent pending technologies that improve biofilter performance, odor neutralizing atomizers at feedstock receiving, material diversion, and Forward Looking Infrared (FLIR) cameras.

### 1:30-2:00pm – Advance Preliminary Treatment, Applications and Advantages

Speaker: Terry M. Gellner, PE, TnT Engineering LLC

The preliminary treatment process at a WWTP is often considered unimportant and therefore passed over. This Engineer's application experience over the past 15 years includes advances in technology and pertinent applications for advance preliminary treatment. The benefits are numerous and the impacts are significant throughout the plant.

### 2:00-2:30pm – Developments and Trends in UV Technology for Wastewater Treatment

Speaker: Chad Angle, GHD Inc.

Significant advances in UV technology have resulted in more efficient UV designs including amalgam lamps, reactor hydraulics, and bioassay testing that allows for better UV selection and predictable design. These advancements have improved the UV selection process to narrow the UV dose requirements, allowing better capital and O&M cost predictions.

### 3:30-4:00pm – The Water PCS Comes of Age in the 21st Century - Leveraging Advanced Technology at Loudoun Water's Trap Rock Water Treatment Facility

Speaker: Joshua Gelman, PE, CDM Smith

This presentation will share the Process Control System (PCS) design and implementation for the new Loudoun Water TRWTF. The presentation will highlight various design concepts, through early planning and design, testing and construction, including the implementation of a dynamic 3D presentation of the new facility.

### 4:00-4:30pm – Aeration Retrofit for the Borough of Elizabethtown

Speaker: Nicole Bolea, Aeration Industries International, LLC

Elizabethtown's wastewater treatment plant had chronic maintenance issues from the baffles in their oxidation ditch that were installed to facilitate consistent treatment. This spurred a simple retrofit with equipment that could aerate and mixing eliminated the baffle failure concern and maintained good process treatment throughout the entire basin.

## UTILITY MANAGEMENT PROGRAM

Moderators: Michael Kyle, Lancaster Area Sewer Authority and Mark Pickering, GHD

### 1:00-1:30pm – What to Know Before You Start Collecting Asset Data for GIS

Speaker: Matthew D. Cichy, PE, Herbert, Rowland & Grubic, Inc.

This presentation will identify options for who can complete the data collection, how it's done and why, and do's and don'ts lessons learned in completing the data collection of sanitary and storm sewer system assets for use in GIS.

### 1:30-2:00pm – Utilizing GIS and EQuIS to Enhance Operational Efficiency

Speakers: Raymond Lees, PE, and Brett Milburn, GISP, both with Langan Engineering & Environmental Services, Inc.

The use of GIS and enterprise data management are providing new solutions to water, wastewater and sewer providers that are increasing operational efficiencies and reducing overall capital expenditures. This presentation will focus on solutions that can be provided to the industry using these technologies through a series of case studies.

# TECHNICAL PROGRAM DETAILS

## 2:00-2:30pm – Asset Management Database Design and Integration

*Speaker: Charlie Card, EBA Engineering, Inc.*

The Lancaster Area Sewer Authority (LASA) had been utilizing an asset management decision making tool implemented as an Excel spreadsheet. This project replaces the Excel spreadsheet with integrated Relational Database Management System (RDBMS) technology while preserving the same registry, condition assessment rating scales, risk framework, business logic, and associated formulae.

## 3:30-4:00pm – Performing a Facility Wide Asset Replacement Evaluation at Your Desk – A Simplified Approach to Capital Planning

*Speaker: Jean Malafronte, Greeley and Hansen, and Samantha Burke, Philadelphia Water*

Much of the equipment from wastewater treatment facilities upgraded to secondary treatment in the late 1970s/early 1980s are still in operation and approaching the end of their service life. To understand the major capital expense of replacing facility components plus system improvements, a simplified desktop analysis was performed for Philadelphia Water's wastewater facilities.

## 4:00-4:30pm – Utilizing Simple Affordable Web-Based Technologies for the Inventory, Operations and Maintenance of your Assets

*Speaker: Howard S. Hodder, Jr., MGIS, GISP, Herbert, Rowland & Grubic, Inc.*

This session provides an overview of the latest web-based GIS technology (ArcGIS) and how its simplicity enables municipalities large and small to build and maintain robust databases in-house, making asset management a viable solution. A case study will highlight Lower Swatara Township Municipal Authority's successful implementation of this technology.

## TUESDAY MORNING

### COLLECTION SYSTEMS PROGRAM

*Moderators: Kate Mechler, Mott MacDonald, and Roger Lehman, Weston Solutions, Inc.*

## 8:00-8:30am – Whole Digging – Excavation, Backfill and Pipe Repair

*Speaker: Jerry Haimowitz, PE, GPM Associates, an Advanced Geoservices Company*

For new construction and repair, learn how to dig and backfill without excess settlement, differential frost heave or future pipe and/or pavement failure. Proctor density and the cause of soil settlement are explained, along with how to avoid soil movement that can damage nearby utilities.

## 8:30-9:00am – Transient Events and Control to Prevent Damage to Sewage Force Mains

*Speaker: Jeffrey S. Grow, PE, ENV SP, RK&K*

With the use of a personal computer and transient analysis software, better determinations can be made regarding the use and location of transient control methods for sewage force mains. This presentation will provide information regarding the importance of modeling of sewage pumping stations and force mains and the selection of adequate transient control.

## 9:00-9:30am – Using an Auxiliary Treatment Plant to Solve SSOs and CSOs

*Speaker: James Cosgrove, PE, Kleinfelder, Inc.*

Sanitary sewer overflows (SSOs) and Combined Sewer Overflows (CSOs) commonly occur in older urban areas during storm events. We developed and obtained regulatory approval for an auxiliary treatment facility to control and treat overflows that was shown to be the most environmentally beneficial alternative and least cost solution.

## 10:30-11:00am – Improving a Problematic Sewage Transfer System over Hilly Terrain: Lessons Learned

*Speaker: Sami Sarrouh, PE, T&M Associates*

For years, Pocono Township's wastewater transfer system did not operate as intended due to hilly terrain. When there was a significant system failure, experts mobilized to stabilize the situation, and design long-term solutions. This presentation will provide lessons applicable to the design of sewer systems in similar challenging conditions.

## 11:00-11:30am – Good Odor Treatment, Good Neighbors – Testing the Latest Wastewater Pumping Stations Technologies

*Speaker: Bill Meinert, O'Brien & Gere*

As part of two pumping station improvement projects, DC Water applied higher standards for odor control. The design phase included field surveys, technology screening, air dispersion modeling, and full-scale piloting of equipment. This presentation will review lessons learned from the application of new odor control standards.

### ENGINEERING PROGRAM

*Moderator: Justin Mendinsky, Herbert, Rowland & Grubic, Inc.*

## 8:00-8:30am – New Solution for Wet Weather Treatment

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

After extensive use in tertiary applications, cloth media filtration has now been adapted for wet weather treatment. This solution has emerged due to its many advantages compared to existing solutions. This stormwater filtration technology is capable of treating extremely high solids while providing high quality effluent without chemicals.

## 8:30-9:00am – Bayonne, NJ, CSO Treatment Demonstration Project - Disinfection Results

*Speaker: Jurek Patoczka, Mott MacDonald*

CSO demonstration project included TSS pretreatment units followed by disinfection with peracetic acid (PAA) or UV lamps. PAA effectiveness was a function of the dose applied as normalized by COD. 3-log deactivation by UV required 25 mJ/cm<sup>2</sup> for low-pressure lamps and 40 mJ/cm<sup>2</sup> for medium-pressure lamps.

## 9:00-9:30am – Next Generation Solutions for Low Impact Development and Green Infrastructure – Overcoming Design, Performance, Installation and Maintenance Challenges

*Speaker: Robert Woodman, PE, CPESC, ACF Environmental*

This presentation provides an overview of the ACF Innovative Suite of Stormwater Solutions. A primary focus will be how the various products can be utilized to solve the common challenges with typical designs. The presentation will highlight recent projects from Maine to Florida and discuss the challenges and lessons learned.

## 10:30-11:00am – Slowing Stormwater BMP Infiltration Rates with Amended Soils

*Speaker: Patrick Boggs, GHD Inc.*

Fast infiltration rates reduce the effectiveness of pollutant removal in stormwater BMPs. Adding a layer of amended soils to the bottom of a BMP is a way to slow infiltration rates down. This presentation will utilize case studies to show where soil amendment was successful and where it was not.

# TECHNICAL PROGRAM DETAILS

## 11:00-11:30am – 2018 MS4 Permit Renewal – Permit Holders Will Have One Year To Get Two Years of Work Completed!

*Speaker: Mark Harman, PG, ARRO Consulting, Inc.*

The first part of the presentation will focus on procedural and governmental changes associated with the 2018 MS4 permit that need to occur and the second part of the presentation will outline the level of effort required to meet the map obligations that extend beyond the current required MS4 map.

## INDUSTRIAL PRETREATMENT PROGRAM

*Moderators: Judy Musselman, GHD Inc., and Deb Watkins, Aqua America*

## 8:00-8:30am – Food & Beverage Industrial Wastewater Treatment through High-Rate Anaerobic MBR Technology

*Speaker: Paul Greene, CDM Smith*

The effectiveness, reliability and robustness of anaerobic membrane bioreactor (AnMBR) technology was evaluated as to whether the AnMBR-style digester is sensitive to a broad spectrum of brewery wastes. Both submerged and pressurized membrane systems were compared and quantified for ease of operation, quality of effluent and cleaning requirements.

## 8:30-9:00am – Novel Solution to Hanover Foods Industrial Waste Treatment Facility Upgrade

*Speaker: Mark Pickering, GHD Inc.*

This presentation focuses on the technologies considered for full direct discharge and the design-build effort for the Hanover Foods IWTF which treats food processing wastewater through a contact anaerobic and lagoon treatment process prior to discharge to both the Penn Township WWTP and to the receiving stream.

## 9:00-9:30am – Innovative Pretreatment of High Strength Dairy Wastewater

*Speaker: Ted Danforth, TSD Environomics, Inc.*

A dairy processing facility was exceeding its limitations. The dairy wastewater was characterized and a pretreatment system designed and installed in a very fast track that did not allow for typical procurement methods. Compliance was achieved following the installation of the pretreatment facilities.

## 10:30-11:00am – Controlling Strength of Waste Issues and Surcharge Models

*Speaker: Heath Edelman, Entech Engineering, Inc.*

Municipalities often struggle with industrial customers who can be problematic for a community's wastewater treatment system but are valuable partners in the community. This presentation explores strength of waste issues caused by industrial users, methods for controlling high strength wastes, consideration for implementation of a surcharge program, and models commonly employed regarding surcharge rate structures.

## 11:00-11:30am – Insight into a Comprehensive Local Limits Analysis: Addressing Regulatory Requirements for a Large Municipal Wastewater Treatment Plant

*Speaker: Nishant Shah, Greeley and Hansen, LLC*

An existing facility is required to reevaluating its local limits. This process involved preparing a list of pollutants of concern, sampling plan and review of existing data. This case study will discuss the process of establishing local limits and review of existing TMDLs and permit discharge limits.

## STORMWATER PROGRAM

*Moderator: Nathan Walker, Amec Foster Wheeler*

## 8:00-8:30am – Leveraging the ArcGIS Platform for a Complete Storm Water Inventory Solution

*Speaker: Daniel Hunter, Gannett Fleming, Inc.*

A high quality comprehensive stormwater inventory can be collected through the use of mobile and cloud based GIS technologies. Building upon the Esri software platform, we developed a comprehensive GIS solution for the inventory, attribution, photography and quality control of all features within a municipal storm water system.

## 8:30-9:00am – Revisions to Pennsylvania NPDES General Permit PAG-03 for Industrial Stormwater Discharges

*Speaker: James P. Cinelli, PE, BCEE, Liberty Environmental, Inc.*

This presentation will outline changes in the PA DEP NPDES General Permit (PAG-03) which are aimed at improving water quality in the Commonwealth. You will learn about improved reporting, increased sampling and inspection requirements, establishing benchmark values for pollutants, examples of BMP installations, and recent PA DEP interpretations on several permit requirements.

## 9:00-9:30am – Using Green and Grey Infrastructure to Solve Stormwater Flooding in the Roxborough Area of Philadelphia

*Speaker: Robert Serpente, PE, D&B/Guarino Engineers*

This presentation will examine the costs and challenges of building parallel grey and green infrastructure for stormwater management in the Upper Roxborough section of the city of Philadelphia. This project includes the stormwater runoff analysis, alternative site evaluation, community outreach, reuse of a retired Philadelphia Water Department facility, construction challenges, and cost estimates.

## 10:30-11:00am – Maximizing Green Infrastructure Opportunities within Philadelphia's Dense Urban Residential Areas

*Speaker: Andrew Anderson, Hazen and Sawyer*

Philadelphia Water is underway with efforts to implement green stormwater infrastructure to reduce combined sewer overflows and improve water quality. Area opportunity analyses serve as a key component of implementation efforts, identifying GSI options available in study areas using mapping and field observations to characterize large developed areas.

## 11:00-11:30am – Washington Street Green Infrastructure; A Redesign of Hoboken's Main Thoroughfare

*Speaker: Gregory Duncan, PE, LEED-AP, T&M Associates*

The City of Hoboken, a CSO community, is redesigning Washington Street, one of the county's "Top 10 Main Streets". This will include fifteen green infrastructure facilities along this downtown corridor. Innovative elements of this program include: diversion/bypass of high flows; subgrade/hidden monitoring facilities; pretreatment of trash, oil and sediment.



# TECHNICAL PROGRAM DETAILS

## STUDENTS & YOUNG PROFESSIONALS PROGRAM

*Moderator: Chase Kelch, Larson Design Group*

### 8:00-11:30am – Kalahari's Indoor Waterpark – Project Challenges and Facility Tour

Kalahari Resorts & Conventions featured a 100,000 square foot indoor waterpark after Phase 1 was completed. Phase 2 of the project will be completed by the time PennTec 2017 begins. This will add another 120,000 square feet of indoor waterpark space, making it the largest indoor waterpark in America. Join the Students and Young Professionals Committee as we examine the challenges associated with making a project of this magnitude come together. The General Manager of the resort, as well as the waterpark Maintenance Supervisor, will partner to present their perspective on the day-to-day operation of the facility. After the presentation, small groups will be taken on a guided tour of the facility.

## TUESDAY AFTERNOON

### COLLECTION SYSTEMS PROGRAM

*Moderators: Jeff Cantwell, Flow Assessment Services, and Melissa Smith, GHD*

### 1:00-1:30pm – Open Cut or Directional Drill? Why Not Do Both?

*Speaker: Joel Kostelac, PE BCEE, GHD Inc.*

Once a capacity problem is identified, alternatives to address it must be analyzed. Those alternatives should include conventional pipe replacement and redirecting flows to other parts of the collection system. Additionally, by utilizing multiple construction methods disturbance can be minimized and overall project costs can be reduced.

### 1:30-2:00pm – Starting from Scratch: Replacing Failing OLDS with Low Pressure Sewer and New Treatment Facility

*Speakers: Jennifer Miller, PE, Herbert, Rowland & Grubic, Inc., and Mark Deimler, PE, Strasburg Township*

After the Act 537 Plan identified a prevalence of malfunctioning OLDS in Refton, PA, a new low pressure collection system and a recirculating sand filter treatment facility was installed for sewage conveyance and treatment. The presentation will focus on public outreach efforts and construction sequencing leading to successful startup.

### 2:00-2:30pm – Greene Township, Erie County: The Long Road to Planning and Implementing a New Municipal Sanitary Sewage System

*Speaker: Chad Hanley, PE, Herbert, Rowland & Grubic, Inc.*

This large collection system case study for an anticipated \$44 million project will focus on the challenges of implementing a new sewage collection system in rural areas and the importance of inter-governmental cooperation and public participation. Secondary focus will be the importance of looking at alternative technologies in creating cost effective projects.

### 3:30-4:00pm – Flood Mitigation in the Birthplace of America: The Cohocksink Storm Flood Relief Project

*Speaker: Jason Marie, Mott MacDonald*

In order to reduce flood risk in the Northern Liberties/Kensington sections, Philadelphia Water is investing in a six phase project that involves the installation of over one mile of new conduits and seven underground chambers. The capacity of the sewer system will increase from approximately 2,000 cfs to 4,000 cfs.

### 4:00-4:30pm – The Development of 1Mark – a Web-Based, Real-Time, XML Interface with PA1Call for Processing 1Call Tickets

*Speaker: Dwight D. Hoare, PE, St. Marys Area Water Authority*

Learn about 1Mark, a web-based software platform that allows every utility doing work in Pennsylvania access to PA1Calls's XML data interface for processing their 1Call tickets. A demonstration using live dig tickets will be provided to show how this new tool eases the burden of processing 1Calls.

## CONSTRUCTION PROGRAM

*Moderator: Justin Mendinsky, Herbert, Rowland & Grubic, Inc.*

### 1:00-1:30pm – The West End Trunk Line Microtunnel Project: Design and Construction Management Approaches Used to Reduce Risk to the Utility

*Speaker: Jason Marie, Mott MacDonald*

The design and construction management approaches used to construct a 1,050 LF segment (60-inch casing pipe, 30-inch carrier pipe) of the overall 16,200 LF West End Trunk Line Project using a MTBM reduced the risk to the utility when subsurface conditions created challenges during the mining process.

### 1:30-2:00pm – Designing, Constructing and Commissioning New Pretreatment Facilities in Eight Months: Use of Progressive Design-Build

*Speaker: Richard G Atoulikian, HDR Engineering*

The genesis of this project was in response to challenging funding deadlines and the fact that the facilities were reaching the end of their useful life. These improvements will improve operational flexibility, reduce maintenance costs and enable Aqua to continue providing reliable and cost-effective service to their customers.

### 2:00-2:30pm – Philadelphia Water – Quality of Life Program

*Speaker: Stephen A. Marcino, PE, Johnson Mirmiran & Thompson*

Philadelphia Water Department has instituted a new and innovative program called, "Quality of Life", which is related to its water and sewer pipe construction projects, to improve communications with its customers who are otherwise inconvenienced during construction.

### 3:30-4:00pm – Successful Application of Horizontal Directional Drilling for a Long River Crossing

*Speaker: John V. Stullken, GHD Inc.*

Horizontal Directional Drilling (HDD) is used for installing pipelines across rivers because it minimizes environmental impacts. Successful HDD application requires understanding geotechnical conditions and appropriate planning, design, and execution. A case study of a long HDD river crossing in a Chesapeake Bay tributary outlines the approach used and lessons learned.

### 4:00-4:30pm – How to Develop a Treatment Plant Safety Program

*Speaker: Kelly Kramer, CECD, HEM, RETTEW*

Treatment plant sites can be a labyrinth of hazards. And while operators and plant personnel keep safe practices in mind, many don't have a formalized, documented safety program. Attendees will learn why a written safety plan is necessary and the steps to create and implement such a plan.

# TECHNICAL PROGRAM DETAILS

## FINANCE PROGRAM

*Moderator: Adrienne Vicari, Herbert, Rowland & Grubic, Inc.*

### **Sell, Lease or Retain – Planning for Financial Sustainability of Public Utility Systems**

Financing challenges associated with maintaining public utilities is on the rise. This session offers insight into strategies municipalities are implementing to ensure their utility systems are financially secure and operating efficiently.

#### **1:00-1:30pm – Selling or Leasing a Public Utility: What Drives This Trend?**

*Speaker: John Brosious, PMAA*

The lease and sale of public utilities is on the rise. This session will discuss reasons municipalities are opting to sell public utilities, distinct advantages and disadvantages to this option and why care should be taken in considering if it's the best long-term approach for system customers and the community at large.

#### **1:30-2:00pm – Using Cost-Benefit Analysis to Validate Your Decision**

*Speaker: Ryan Brockman, Herbert, Rowland and Grubic, Inc.*

Cost-benefit analysis is a valuable tool in determining whether to sell or retain a public utility. By quantifying the benefits and costs of this substantial transaction, decision makers can validate if it is in the best interest of the municipality and more importantly the community.

#### **2:00-2:30pm – Proactive Strategies to Retain Public Utilities and Remain Financially Secure**

*Speaker: Adrienne Vicari, PE, Herbert, Rowland and Grubic, Inc.*

This presentation will explore tools and strategies utility leaders can implement to ensure their facilities are maintained and improved in the most cost-effective manner, helping improve the financial sustainability for long-term municipal ownership. Asset Management and Capital Improvement Planning will be discussed along with other solutions which support long term viability of infrastructure.

#### **3:30-4:00pm – Funding Infrastructure Projects Through Government Subsidized Financing**

*Speaker: Brion Johnson, PENNVEST*

There is a variety of subsidized loan/grant funding options available to move infrastructure projects forward, however it is imperative to find the right fit. This portion of the Finance Session will provide the audience with an understanding of what is available and the regulations attached to specific funding sources.

#### **4:00-4:30pm – Financing Your Infrastructure Needs Through USDA**

*Speaker: Susanne Gantz, USDA Rural Utility Service*

An increase in USDA funding in recent years has enabled the agency to team with additional Pennsylvania local governments and authorities to strengthen water and wastewater infrastructure throughout the Commonwealth. USDA's presentation will provide an overview of their program, availability of funds and tips for developing competitive financing applications.

## INDUSTRIAL PRETREATMENT PROGRAM

*Moderators: Judy Musselman, GHD Inc., and Deb Watkins, Aqua America*

### **1:00-1:30pm – Technology Evaluation for COD and TDS Reduction in Leachate**

*Speaker: Jurek Patoczka, Mott MacDonald*

A leachate pretreatment plant needed improvements to meet its limits for COD (500 mg/L) and TDS (8,000 mg/L). Technologies investigated included MBR, NF, alternative coagulants, activated carbon, and chemical oxidation. MBR was recommended, with nanofiltration or activated carbon post-treatment needed if COD and/or TDS limits were not relaxed.

#### **1:30-2:00pm – Application of Membrane Technology to Treat Landfill Leachate**

*Speaker: Thomas G. Pullar, PE, EarthRes Group, Inc.*

Landfill leachate treatment and disposal continues to be a major challenge facing the solid waste industry. This presentation discusses the selection, design and operational considerations of membrane technology for landfill leachate treatment.

#### **2:00-2:30pm – Treatment Alternatives for Elevated Temperature Landfill Leachates**

*Speaker: Rohan Menon, Geosyntec Consultants*

This presentation will discuss treatment solutions for elevated temperature landfill leachates that use innovative, conventional and/or proven treatment technologies that ultimately result in long-term cost reduction and investment payback. Elevated temperature landfill leachates typically have much higher organic, nitrogen and dissolved solids concentrations, coupled with a complex and variable matrix.

#### **3:30-4:00pm – Bench Scale Evaluation of the Impact of Thiourea Discharges on a Wastewater Treatment Plant**

*Speaker: Bradley Kaley, AECOM*

The effects of a solar panel manufacturing plant's thiourea discharges on a wastewater treatment plant in upstate New York were evaluated in bench scale laboratory tests. Nitrification, COD removal, chlorine demand, anaerobic gas production, and thiourea biodegradation were all examined, and potential discharge limits for the manufacturing plant were developed.

#### **4:00-4:30pm – An Innovative Geotextile And Advanced Polymer Process For Treating Selected Industrial And Municipal Waste Streams**

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

Advances in geotextile design and advanced polymers have resulted in cost effective treatment technologies for processing industrial and municipal waste streams through significant reductions in solids requiring disposal and the recycling of liquid waste streams as applied in oil and gas, chemical, biosolids, food processing, coal ash residuals, and acid mine drainage sectors.

# TECHNICAL PROGRAM DETAILS

## STUDENT RESEARCH PROGRAM & POSTER CONTEST

*Moderator: Rachel Brennan, PhD, PE, The Pennsylvania State University*

### 1:00-4:30pm

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 five for oral presentations—and qualifying abstracts are invited to participate in a Poster Contest at the conference. After judging by faculty and practicing engineers, the top three poster presenters in both undergraduate and graduate categories will receive Student Research Poster Awards. All posters will be available for viewing by conference attendees, and awards will be presented during the Research Program.

## WEDNESDAY MORNING

### PROFESSIONAL WASTEWATER OPERATIONS PROGRAM

*Moderator: Carrie Keeley, Philadelphia Water Department*

#### 8:00-8:30am – RBCs to SBRs: The ABC's of Curwensville Municipal Authority's Chesapeake Bay WWTP Upgrade

*Speaker: Andrew Glitzer, PE, GHD Inc.*

Like many communities in the Chesapeake Bay watershed, the Curwensville Municipal Authority faced the dual challenge of meeting new nutrient limits and the replacement of aging equipment with a cost effective approach. This presentation will review the planning, design, construction, and operation and reflect on lessons learned on the upgrade process.

#### 8:30-9:00am – Cost Effective MBR Retrofit with Simplified Operations

*Speaker: Chintan Parikh, Ovivo USA*

There has been a misconception carried over from the early years of membrane technology that Membrane Bioreactors are expensive to build, operate and maintain. Several case studies will be discussed that show how easy and cost-effective MBR retrofit can be and can cost as low as \$2/gallon.

#### 9:00-9:30am – Development and Implementation of Lagoon Sludge Management Plans for Compliance with NPDES Permit Requirements

*Speaker: Kelly Brenner, LO, EIT, ARRO Consulting, Inc.*

This presentation is intended to provide a basic understanding for creating and implementing a lagoon sludge management plan specific to each individual treatment plant, including establishing a lagoon sampling plan, sampling frequency, sample collection, and compliance with lagoon cleaning requirements.

#### 10:00-10:30am – Modeling Wastewater Treatment with IViewOps3 for Complex Waste Treatment: Plant Diagnostics, Troubleshooting and Operation

*Speaker: William G. Smith, Enviro/Sci Corporation*

An evaluation of the treatment capabilities employing IViewOps3 modeling software for treatment process simulation and evaluation as well as the fate of CBOD20 through the treatment processes. A 2.5 mgd attached growth treatment plant with two stage trickling filters was incurring long term intermittent excursions for CBOD20 effluent requirements.

#### 10:30-11:00am – Transferring O&M Information to a Web-Based Format

*Speaker: John Cannon, GHD Inc.*

Operations and Maintenance information is more accessible and durable when migrated out of old paper binders and onto an online, web-based interface. This presentation will demonstrate one way that this migration can be accomplished.

### WATER SUSTAINABILITY & REUSE PROGRAM

*Moderators: Michele Braas, RETTEW, and Anthony Elberti, Gannett Fleming, Inc.*

#### 8:00-8:30am – Optimizing MBR Treatment Facilities with Effluent Sewer Collection Systems

*Speaker: Julie Barown, Orenco Systems, Inc.*

By making MBRs a more cost-competitive treatment technology, wastewater reuse becomes more feasible for small and decentralized applications. Septic Tank Effluent Pump (STEP) collection systems are ideal for MBRs since they allow downsized preliminary treatment systems, directly reduce fouling frequencies, electrical consumption and capital costs of an MBR facility.

#### 8:30-9:00am – Regional Wastewater Effluent Solution for Irrigation Issues

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

This presentation will focus on an evaluation that was completed to provide Municipal WWTP effluent water to the Sunset Golf Course in Dauphin County, PA, the obstacles that needed to be overcome to achieve a successful project, and the potential implications that such a project holds for both the community through water conservation and improved water quality.

#### 9:00-9:30am – Cranberry Highlands Golf Course: A Look Back at 15 Years of Reuse

*Speaker: Chad Hanley, PE, Herbert, Rowland & Grubic, Inc.*

The beneficial reuse of WWTP effluent at the Cranberry Highlands Golf has proven to be a highly successful undertaking and a model example of the benefits of water reuse. This presentation will give a brief overview of the history of the project and then focus on the successes and lessons learned over the last 15 years.

#### 10:00-10:30am – WWTP Process Leftovers – How Much Can We Squeeze In?

*Speaker: Isaac Katz, O'Brien & Gere*

As part of a WWTP upgrade we were tasked with a set of zero-energy goals. The goal; create as much energy, reuse and green infrastructure as possible through the parts of the process that you would normally throw away. This presentation will explore these various process leftovers.

#### 10:30-11:00am – PA's Nutrient Trading Program: Then and Now

*Speaker: Lisa Boudeman, Material Matters, Inc.*

Established in 2011, Pennsylvania's nutrient trading program has recently undergone significant changes that are expected to drastically change the nutrient trading market. This presentation evaluates the successes and downfalls of Pennsylvania's nutrient trading program, and discusses the effects of the rule changes on the nutrient credit pricing in the future.

# PENNTec 2017 WORKSHOPS

The following workshops are being offered during PennTec 2017 on June 5-7 at the Kalahari Resort & Convention Center in Pocono Manor, PA. You may add these courses to your PennTec registration, or you may register for individual course(s) separately. You must register in advance for these courses. All courses are limited to 40 attendees.

## Monday, 8:45am-12:00pm

A Safety Committee Workshop (includes two courses)

Speaker: 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.

## Monday, 9:00am-4:30pm

An Industrial Pretreatment Committee Workshop

### Industrial Inspections 360

This course is PA DEP approved for **6.0 wastewater contact hours**. Course ID 7319.

Speakers: Stephen Copeland, US EPA, John Lovell, US EPA, Judy Musselman, GHD, Randy L. Schaffer, Capital Region Water, and Christine Volkay-Hilditch, City of Lancaster

POTWs with and without EPA-approved industrial pretreatment programs conduct inspections at industries in their service areas to ensure industrial discharges will not cause pass through or interference, or affect sludge quality at the wastewater treatment plant. This workshop will discuss different types of inspections, how to prepare for an inspection, what to review during an inspection, safety concerns during an inspection and follow-up inspection activities.

## Monday & Tuesday, 8:00am-5:30pm

A PWO Workshop

### Activated Sludge Refresher Course

This two-day course is PA DEP approved for **16.0 wastewater contact hours**. Course ID 3884. (You must attend both days to receive credit.)

Speakers: Jenifer Fields, PA DEP SERO, and Thomas Brown, PA DEP

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 provided with a vocabulary list in order to become familiar with the material before classroom training. Training includes exam taking skills and practice, math drills, concept reinforcement, confidence building, homework, and a supportive learning environment.

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

A Laboratory Practices Committee Workshop

### Laboratory Ethics

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

Speaker: 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.

## Tuesday, 8:00am-4:30pm

A PWO Committee Workshop

### Wastewater Professionals Guide to Online Process Instrumentation for Biological Nutrient Removal Activated Sludge Monitoring

This course is PA DEP approved for **6.0 wastewater contact hours**. Course ID 6423.

Speaker: Robert Smith, Xylem

Nutrient removal and sustainability are two of the biggest drivers in the wastewater industry today. Both demand increased automation of the activated sludge process implemented using feedback from online sensors in order to be achieved. Technology has stepped up to fill the need with a new generation of online sensors capable of monitoring at a frequency, accuracy, and reliability suitable for feedback control. However, even the best designed sensor cannot fulfill its full capabilities without proper training of the end user. Unfortunately, Operators are often left on their own to figure out how to operate and maintain these highly technical devices after the salesman or the Contractor leaves causing reduced performance and lifetime. This workshop provides participants essential information on the selection and care of online instrumentation for monitoring and control of biological nutrient removal (BNR) activated sludge. The main objective is to teach participants good practices that are essential to successful process monitoring.

## Wednesday, 8:00am-12:00pm

A PWO Committee Workshop

### Responsibilities of Clean Water Professionals

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

Speakers: Robert DiGillarmo and Thomas Brown, both with PA DEP

This course will include an introduction to the Wastewater Operator Code of Ethics. Discussions will include protecting and maintaining the wastewater system; laws, rules and regulations that impact wastewater operators; and security and emergency planning for wastewater. Upon conclusion of this course, students will be able to describe the importance of good communication and establish a communication system with system owners, customers, and regulatory agencies and they will be ready to accept and carry out the responsibilities and rewards of being a Clean Water Professional.



# 2017 WORKSHOP REGISTRATION FORM

**PLEASE PRINT**

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

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

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

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

Phone: \_\_\_\_\_ Email: \_\_\_\_\_

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

☐ Check here if you are a Young Professional. (Age 35 or younger; Driver's License ID required.)

Note: a copy of your PA DEP Client ID Card (or PA DEP License) must be submitted with your registration if you are attending for PA DEP contact hours.

	NO FEE WITH FULL PENNTEC REGISTRATION*		FEE FOR WORKSHOP ONLY** BY MAY 15	ONSITE
<b>Monday, 8:45am-12:00pm - Safety Committee</b> <b>Confined Space and Excavation &amp; Trenching Awareness</b> PA DEP approved for 3.0 drinking water & wastewater contact hours	<input type="checkbox"/> \$0	PWEA Member Non-Member	<input type="checkbox"/> \$65 <input type="checkbox"/> \$120	<input type="checkbox"/> \$85 <input type="checkbox"/> \$140
<b>Monday, 9:00am-4:30pm - Industrial Pretreatment Committee</b> <b>Industrial Inspections 360</b> PA DEP approved for 6.0 wastewater contact hours	<input type="checkbox"/> \$0	PWEA Member Non-Member	<input type="checkbox"/> \$110 <input type="checkbox"/> \$165	<input type="checkbox"/> \$130 <input type="checkbox"/> \$185
<b>Monday &amp; Tuesday, 8:00am-5:30pm - PWO Committee</b> <b>Activated Sludge Refresher Course (this is a two-day course)</b> PA DEP approved for 16.0 wastewater contact hours	***	PWEA Member Non-Member	<input type="checkbox"/> \$245 <input type="checkbox"/> \$300	<input type="checkbox"/> \$265 <input type="checkbox"/> \$320
<b>Tuesday, 8:00am-11:30am - Lab Practices Committee</b> <b>Laboratory Ethics</b> PA DEP approved for 3.0 drinking water & wastewater contact hours	<input type="checkbox"/> \$0	PWEA Member Non-Member	<input type="checkbox"/> \$65 <input type="checkbox"/> \$120	<input type="checkbox"/> \$85 <input type="checkbox"/> \$140
<b>Tuesday, 8:00am-4:30pm - PWO Committee</b> <b>Wastewater Professionals Guide to Online Process Instrumentation for Biological Nutrient Removal Activated Sludge Monitoring</b> PA DEP approved for 6.0 wastewater contact hours	<input type="checkbox"/> \$0	PWEA Member Non-Member	<input type="checkbox"/> \$110 <input type="checkbox"/> \$165	<input type="checkbox"/> \$130 <input type="checkbox"/> \$185
<b>Wednesday, 8:00am-12:00pm - PWO Committee</b> <b>Responsibilities of Clean Water Professionals</b> PA DEP approved for 3.5 wastewater contact hours	<input type="checkbox"/> \$0	PWEA Member Non-Member	<input type="checkbox"/> \$70 <input type="checkbox"/> \$125	<input type="checkbox"/> \$90 <input type="checkbox"/> \$145

\* To qualify for complimentary workshop registration with your full PennTec registration, attach this form to the completed registration form found on page 19.

\*\* One check may be issued for the combined total due for Conference Registration and Workshop Registration

\*\*\* Not available with full Conference registration. Attendance requirements for this course prohibit participation in Conference sessions and activities.

## Method of Payment

☐ Check (payable to PWEA) ☐ MasterCard ☐ Visa ☐ American Express Total Due: \$ \_\_\_\_\_

Card Number: \_\_\_\_\_ Expiration Date: \_\_\_\_\_ Security Code: \_\_\_\_\_

Name (as it appears on card): \_\_\_\_\_ Signature: \_\_\_\_\_

Billing Address (if different from above): \_\_\_\_\_

## Cancellation/Substitution Policy

No refunds granted after April 30th. A \$50 cancellation fee will be assessed on all refund requests received by April 30th. All refunds must be requested in writing. Substitutions are permitted with a \$25 per person substitution fee. Substitutions may be made until May 15th and must be made in writing, accompanied by a new registration form.

Please send completed registration form and full payment to:

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

## NETWORKING EVENTS

### PWEA Annual Business Meeting

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

PWEA members and non-members are invited to attend and participate in the Annual Business Meeting. The Board of Directors welcomes input from everyone.



Not a member? Join online, print a membership application from the PWEA web site, [www.pwea.org](http://www.pwea.org), or pick one up at the registration desk on-site.

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

### President's Reception

*Monday, 4:30-5:30pm*

Be sure to attend the President's Reception! Enjoy complimentary beer & snacks while you network with your colleagues and the vendors.



*There is no charge for this event.  
Dress is casual.*

### PWEA Annual Dinner & Awards Ceremony

*Monday, 6:00-9:00pm*

The Annual Awards Ceremony honoring your colleagues who have won prestigious state and national awards will take place during the pre-dinner cocktail hour, followed by the Annual Dinner.



**Tickets for those who register for the Full Conference are at the discounted fee of \$35.**

Guests, daily registrants, and those with other types of registrations may purchase tickets at \$75 per person.

Includes dinner and two drink tickets.

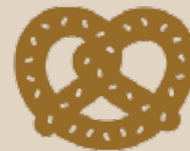
Pre-registration is required. On-site registration is not available for this event.

*Dress is business casual.*

### Beer & Pretzels Reception

*Tuesday, 4:30-5:30pm*

We will be serving complimentary beer, root beer, and soft pretzels! Come to the Hall to relax and visit with the vendors.



*There is no charge for this event.  
Dress is casual.*

### Operator Olympics

*Tuesday, 4:30-5:30pm*

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

Bowling, using a ball from a pump and BOD bottles;

Plunger Toss, tossing small plungers into a bucket;

Golf Ball Chip, chipping golf balls into a toilet;

Hockey, score a goal through a toilet seat; and

Turd Toss, throw (plastic!) turds into a bucket.

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

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



### "Raise Your Glass" with the YP Committee

*Tuesday, 6:00-9:00pm*

New this year! Come and join PWEA's Young Professionals for a wine and food pairing tasting event! Participants will taste various Pennsylvania wines, and learn appropriate food-wine pairings from a PA winery owner. Participants will gain first-hand insight into how the wines are made and how winery wastewater is managed, and will also learn about the history of each wine variety. If you are looking for a fun evening with fellow SYPs and experienced professionals alike, this program will not disappoint!



*Cost is \$50 per person, which includes hors d'oeuvres and beverages. A limited number of tickets will be available on-site.  
Dress is casual.*

# 2017 CONFERENCE REGISTRATION FORM

**PLEASE PRINT**

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

☐ Check here if you are a Young Professional.  
(Age 35 or younger; Driver's License ID required.)

☐ **College Students** – Registration fee is waived for full-time college students if this form is submitted with a photocopy of current student identification. Social events and workshops are not included.

Are you a member of any PA Sections (check all that apply): ☐ EPWPCOA ☐ CPWQA ☐ WPWPCA

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

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

## CONFERENCE REGISTRATION (Check appropriate fee.)

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

	By March 31	April 1-May 15	On-Site
<b>Full Conference</b>			
PWEA Member	<input type="checkbox"/> \$425	<input type="checkbox"/> \$475	<input type="checkbox"/> \$510
Non-Member	<input type="checkbox"/> \$505	<input type="checkbox"/> \$555	<input type="checkbox"/> \$590
<b>Monday Only</b>			
PWEA Member	<input type="checkbox"/> \$240	<input type="checkbox"/> \$290	<input type="checkbox"/> \$325
Non-Member	<input type="checkbox"/> \$300	<input type="checkbox"/> \$350	<input type="checkbox"/> \$385
<b>Tuesday Only</b>			
PWEA Member	<input type="checkbox"/> \$240	<input type="checkbox"/> \$290	<input type="checkbox"/> \$325
Non-Member	<input type="checkbox"/> \$300	<input type="checkbox"/> \$350	<input type="checkbox"/> \$385
<b>Wednesday Only</b>			
PWEA Member	<input type="checkbox"/> \$85	<input type="checkbox"/> \$100	<input type="checkbox"/> \$115
Non-Member	<input type="checkbox"/> \$100	<input type="checkbox"/> \$115	<input type="checkbox"/> \$130

### Monday Only Student & Young Professional (SYP) Registration

SYP PWEA Member	<input type="checkbox"/> \$150	<input type="checkbox"/> \$200	<input type="checkbox"/> \$235
SYP Non-Member	<input type="checkbox"/> \$200	<input type="checkbox"/> \$250	<input type="checkbox"/> \$285

**Complimentary with SYP Registration – check if you will attend:**

☐ PWO Plant Tour

### Tuesday Only Student & Young Professional (SYP) Registration

SYP PWEA Member	<input type="checkbox"/> \$150	<input type="checkbox"/> \$200	<input type="checkbox"/> \$235
SYP Non-Member	<input type="checkbox"/> \$200	<input type="checkbox"/> \$250	<input type="checkbox"/> \$285

**Complimentary with SYP Registration – check if you will attend:**

☐ Wine Tasting Event

## NETWORKING EVENTS

**Complimentary Events** – please indicate whether you will attend

<b>Monday</b> - President's Reception	<input type="checkbox"/> yes	<input type="checkbox"/> no
<b>Tuesday</b> - Beer & Pretzels Reception	<input type="checkbox"/> yes	<input type="checkbox"/> no

**Ticketed Events** – please indicate quantity of tickets and total.

	Quantity	Cost	Total Due
<b>Sunday</b>			
Golf Tournament	_____	\$ 90 per person	\$ _____
Foursome discount *	_____	\$340 per foursome	\$ _____
* To qualify for the foursome discount, full payment must accompany this form. Provide names, if known.			
1. _____	3. _____		
2. _____	4. _____		

### Monday

PWO Plant Tour	_____	\$20 per person	\$ _____
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Annual Dinner	1 @ \$35	\$ _____
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(This Dinner fee is only available for those who purchase a Full Conference Registration; includes 2 drink tickets.)

Annual Dinner	_____	\$75 per person	\$ _____
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(This Dinner fee is for anyone who did not register for the full conference; includes 2 drink tickets.)

### Tuesday

Wine Tasting Event	_____	\$50 per person	\$ _____
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(Includes hors d'oeuvres & beverages.)

## Method of Payment

To qualify for the early registration discount, payment must be postmarked by March 31st.

Total Registration Fees: \$ \_\_\_\_\_

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

☐ Check (payable to PWEA)

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

☐ MasterCard

☐ Visa

☐ American Express

Card Number: \_\_\_\_\_ Expiration Date: \_\_\_\_\_ Security Code: \_\_\_\_\_

Name (as it appears on card): \_\_\_\_\_ Signature: \_\_\_\_\_

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 Fax: 570-549-2221 • Phone: 570-549-2204  
 Email: cindyrock@pwea.org

# SAVE THE DATE

## June 4-7 2017

### Why Your Employer Should Invest in You Attending PennTec 2017

1. Continuing Education Credit – earn up to **15.5** DEP contact hours for operator licenses; or up to **18.5** Professional Development Hours for professional engineer licenses
2. Find Solutions to Current Problems – regulatory issues, equipment issues, management issues, customer service issues, process issues, etc.
3. Find Ways to Do More with What Your Organization Already Has
4. Discover New & Innovative Technologies to Take Your Organization Into the Future
5. Powerful Networking Opportunities – talk with people who can save your organization money
6. Cross-Training Opportunities for Others While You Attend PennTec
7. You Can Return and Share the Information Gained from Attending PennTec