Thomas J. Lauro
MEMBER
EDUCATION TRAINING PROGRAM 2023
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New York Water Environment Association, 525 Plum Street, Suite 102, Syracuse, New York 13204 • nywea.org
On April 22, 2020, due to complications from COVID-19, we lost a wonderful NYWEA member and friend, Thomas J. Lauro. For someone who dedicated his life to water quality and the environment, Tom's passing on Earth Day is somehow a tribute, a way we will always remember him.

Tom was a graduate of Manhattan College, receiving a Bachelor of Science in Engineering, a Master of Environmental Engineering, and was a New York State Licensed Professional Engineer and Grade 4A certified wastewater operator. He served in the New York Army National Guard from 1972 to 1978. After working as a consultant, Tom joined Westchester County's Department of Environmental Facilities in 1980 where he worked at all seven wastewater facilities over his career. Because of his leadership and technical skills, he was appointed to Commissioner by multiple County Executives and served from 2007 to 2017. He was an avid New York Mets and New York Jets fan, loved golf and served as a volunteer for the St. Vincent de Paul Society at Transfiguration Parish in Tarrytown. He raised awareness and funds for NYWEA, he was a supporter of Concern Worldwide (concernusa.org), a humanitarian non-profit organization that works with the poorest people on the globe to transform their lives and recover from disaster. A loving husband, father and proud grandfather, Tom's great sense of humor, kindness and ability to fix just about anything will also be missed by his large extended family and his many treasured friends.

As many of you know, Tom's dedication to NYWEA was incredible. He was a member for over 40 years and he served as President of NYWEA in 2007. As a further demonstration of his commitment, he served as Assistant Treasurer from 2010 to 2014 and Treasurer from 2014 to 2018 after which he was elected to serve as Treasurer Emeritus. He also held several leadership positions in the Lower Hudson Chapter. Not only was he an ex-officio member of NYWEA's Finance Committee, he was working with his fellow alumni from Manhattan College to make sure an article was featured in the Summer 2020 Clear Waters on its new lab. Tom was also a routine participant in the Utility Executives and Government Affairs Committee meetings. He worked with elected officials and the environmental advocacy community representing the interest of our utilities across the state. Tom's passion for communicating NYWEA's clean water mission was evident when he attended the WEF Washington, D.C. Fly-ins.

Tom received numerous awards from NYWEA, including being inducted into the Select Society of Sanitary Sludge Shovelers and the Golden Manhole Society. His dedication to NYWEA's mission ran deep, as he was also involved in reviewing the scholarship finalists. For those of us who have worked with Tom over the years, you know what a beautiful soul he was. Generous and thoughtful, Tom was one of the foundational supporters of the organization's scholarship program.

Renaming the Member Education Program gives us a lasting memory of him and inspires us to do such good as Tom did.
<table>
<thead>
<tr>
<th>DATE</th>
<th>CHAPTER</th>
<th>TIME</th>
<th>LOCATION</th>
<th>TRAINING TOPIC</th>
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<tbody>
<tr>
<td>Feb. 23, 2023</td>
<td></td>
<td>9:00 am-10:00 am</td>
<td>Virtual</td>
<td>On-site Use of Biogas for Resilient Electric &amp; Thermal Production Using Combined Heat and Power Webinar</td>
</tr>
<tr>
<td>Mar. 2, 2023</td>
<td></td>
<td>9:00 am-11:00 am</td>
<td>Virtual</td>
<td>Confined Space Awareness Webinar</td>
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<tr>
<td>Mar. 30, 2023</td>
<td></td>
<td>9:00 am-10:00 am</td>
<td>Virtual</td>
<td>Onsite Use of Biogas with Combined Heat and Power Webinar</td>
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<tr>
<td>Apr. 4, 2023</td>
<td></td>
<td>9:00 am-11:00 am</td>
<td>Virtual</td>
<td>Occupational Stress Webinar</td>
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<tr>
<td>Apr. 18, 2023</td>
<td>Genesee</td>
<td>8:00 am-4:00 pm</td>
<td>Van Lare WRRF</td>
<td>Biohazards of Water/Wastewater Work (In person, 6 hrs.)</td>
</tr>
<tr>
<td>May 8, 2023</td>
<td>Genesee</td>
<td>8:30 am-1:45 pm</td>
<td>Van Lare WRRF</td>
<td>Wastewater Microbiology Training (In person, 6 hrs.)</td>
</tr>
<tr>
<td>May 8, 2023</td>
<td>Long Island</td>
<td>8:30 am-1:45 pm</td>
<td>Bergen Point</td>
<td>Wastewater Microbiology Training (In person, 6 hrs.)</td>
</tr>
<tr>
<td>May 25, 2023</td>
<td>Central</td>
<td>8:00 am-4:00 pm</td>
<td>Nexus Ctr., Utica</td>
<td>Anaerobic Digestion &amp; Biogas Safety Training (In person, 6 hrs.)</td>
</tr>
<tr>
<td>Jun. 7-9, 2023</td>
<td></td>
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<td></td>
<td>NYWEA-NEWEA Joint Spring Technical Conference and Exhibition, Saratoga Hilton, Saratoga Springs, NY</td>
</tr>
<tr>
<td>Jun. 20, 2023</td>
<td>Western</td>
<td>8:00 am-4:00 pm</td>
<td>Tonawanda</td>
<td>Emergency Preparedness &amp; Crisis Management (In person, 6 hrs.)</td>
</tr>
<tr>
<td>Jun. 29, 2023</td>
<td>Capital</td>
<td>8:00 am-4:00 pm</td>
<td>Saratoga Fire TC</td>
<td>Mathematics for Water &amp; Wastewater Operators (In person, 6 hrs.)</td>
</tr>
<tr>
<td>Jun. 29</td>
<td>L. Hudson</td>
<td>8:00 am-4:00 pm</td>
<td>Wallkill Golf Cl.</td>
<td>Biohazards of Water/Wastewater Work (In person, 6 hrs.)</td>
</tr>
<tr>
<td>Jul. 25</td>
<td></td>
<td>9:00 am-11:00 am</td>
<td>Virtual</td>
<td>Fundamentals of Occupational Chemical Exposure Webinar, Part 1</td>
</tr>
<tr>
<td>Jul. 27</td>
<td></td>
<td>9:00 am-11:00 am</td>
<td>Virtual</td>
<td>Fundamentals of Occupational Chemical Exposure Webinar, Part 2</td>
</tr>
<tr>
<td>Aug. 10</td>
<td>L. Hudson</td>
<td>8:00 am-4:00 pm</td>
<td>New Rochelle</td>
<td>Mathematics for Water &amp; Wastewater Operators (In person, 6 hrs.)</td>
</tr>
<tr>
<td>Sept. 21</td>
<td>Central</td>
<td>8:00 am-4:00 pm</td>
<td>Vestal</td>
<td>Polymers, P Removal, &amp; State of Chemical Industry (In person, 6 hrs.)</td>
</tr>
<tr>
<td>Oct. 19</td>
<td>Long Island</td>
<td>8:00 am-4:00 pm</td>
<td>Bergen Point</td>
<td>Mathematics for Water &amp; Wastewater Operators (In person, 6 hrs.)</td>
</tr>
<tr>
<td>Oct. 26, 2023</td>
<td>Capital</td>
<td>8:00 am-4:00 pm</td>
<td>Latham</td>
<td>Strategic Energy Management</td>
</tr>
<tr>
<td>Nov. 14, 2023</td>
<td>Western</td>
<td>8:00 am-4:00 pm</td>
<td>Tonawanda</td>
<td>Chlorine Disinfection Soup to Nuts</td>
</tr>
<tr>
<td>Dec. 5, 2023</td>
<td></td>
<td>12:00 pm-1:00 pm</td>
<td>Virtual</td>
<td>The Importance of Upfront Project Planning; Leading with Intentional Design Webinar</td>
</tr>
<tr>
<td>Dec. 12, 2023</td>
<td></td>
<td>9:00 am-11:00 am</td>
<td>Virtual</td>
<td>Biosolids Management Webinar</td>
</tr>
<tr>
<td>Feb. 5-7, 2024</td>
<td></td>
<td></td>
<td></td>
<td>96th Annual Meeting, Technical Conference &amp; Exhibition, Marriott Marquis, New York City</td>
</tr>
</tbody>
</table>
### Mathematics for Water & Wastewater Operators

**Instructor**  
Robert Wither, PE

**Location**  
Saratoga County Fire Training Center, 6010 County Farm Rd., Ballston Spa, NY

**Contact Hours**  
6 RTC approved (RTC #17997-23)  
6 ATC approved (ATC #152-7576-21463)

**Cost**  
Members $60  
Non-members $145 (includes 1 year affiliate membership)

**Time**  
8:00 am-4:00 pm

#### Course Schedule

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
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<tbody>
<tr>
<td>8:00 am</td>
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<tr>
<td>8:30 am</td>
<td>Basic Mathematics Review as it pertains to working at a treatment facility</td>
</tr>
<tr>
<td></td>
<td>(Real World/Applied Math or what you should know)</td>
</tr>
<tr>
<td></td>
<td>Decimals, fractions, concentrations, % solids, understanding laboratory</td>
</tr>
<tr>
<td></td>
<td>results from a mathematics perspective, basic equations</td>
</tr>
<tr>
<td>10:30 am</td>
<td>Break</td>
</tr>
<tr>
<td>10:45 am</td>
<td>Using Mathematics to Better Understand Treatment Plants</td>
</tr>
<tr>
<td></td>
<td>Calculation of unit process and unit operation organic, hydraulic and</td>
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<td></td>
<td>solids loadings, familiarity with standard treatment facility terms and</td>
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<tr>
<td></td>
<td>design ranges</td>
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<tr>
<td>12:00 Noon</td>
<td>Lunch</td>
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<tr>
<td>1:00 pm</td>
<td>The importance of mathematics at a Treatment Facility</td>
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<td>Process control and proper dosing and calculation of mass quantities</td>
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<td>Activated Sludge Calculations, Sludge Handling, Flow Measurement</td>
</tr>
<tr>
<td>2:30 pm</td>
<td>Break</td>
</tr>
<tr>
<td>2:45 pm</td>
<td>Attendees Participation Concerning Their Specific Facility – Discussion</td>
</tr>
<tr>
<td></td>
<td>and Calculations</td>
</tr>
<tr>
<td>3:45 pm</td>
<td>Q &amp; A, evaluations and wrap up</td>
</tr>
<tr>
<td>4:00 pm</td>
<td>Class dismissal</td>
</tr>
</tbody>
</table>
Capital Chapter

October 26

Strategic Energy Management

Instructors
Ken Scherrieble, Peter Wernsdorfer, Camden Group

Location
Mohawk View WPCP, 200 Onderdonk Ave., Latham, NY

Contact Hours
Requested. RTC & PDH pending

Cost
Members $60
Non-members $145 (includes 1 year affiliate membership)

Time
7:30 am-4:00 pm

Course Schedule

7:30 am  Registration
8:00 am  Welcome and the Reactive vs. Proactive Response to Your Energy Bill
8:30 am  Energy basics; rate schedules, consumption and demand
9:00 am  Energy mapping: Estimating energy consumption in your facility by process area
10:00 am Break
10:15 am Tracking key performance indicators, benchmarks and energy events
10:35 am Technical training: Common low and no-cost energy saving opportunities
11:35 am Management sponsors, energy champions, energy teams and employee engagement – It takes a village.
12:15 pm Lunch
1:00 pm  Treasure hunt activity in host facility!
2:15 pm  Break
2:30 pm  Regroup, review findings and discuss opportunities
2:55 pm  Leveraging help: Your local energy provider, state agencies, DOE 50001 ready
3:15 pm  Barriers to success
3:25 pm  NYSERDA’s SEM efforts, WEC Pilot review and application process
3:35 pm  Course evaluations and plant survey
3:45 pm  Questions and answers
4:00 pm  Course adjourned
May 25

Anaerobic Digestion and Biogas Safety Training

Sara Martin, Mark Greene, Frank DeOrio, Amy Weils

The Nexus Center, 400 Oriskany St. West, Utica, NY

Requested: 6 RTC; PDH pending

Members $60, Non-members $145 (includes 1 year affiliate membership)

8:00 am-4:00 pm

Course Schedule

8:00 am-8:30 am
Registration

8:30 am-10:00 am
Lead Instructor Mark Greene
- Overview of Anaerobic Digestion
- Digester Enhancements

10:00 am-10:15 am
Break

10:15 am-11:45 am
Lead Instructor Sara Martin
- Design Considerations
- Biogas Utilization & Safety

11:45 am-12:45 pm
Lunch

12:45 pm-2:15 pm
Lead Instructor Frank DeOrio
- Operational Overview of Digesters
- Importance of Nutrients and Process Control
- Groundbreaking Genetic Research on Anaerobic Microbes

2:15 pm-2:30 pm
Break

2:30 pm-4:00 pm
Lead Instructor Amy Weils
- Digester Start-Up and Sour Digesters
- Case Studies including funding aspects
Central Chapter

September 21

Polymers, Phosphorus Removal and the State of the Chemical Industry

Instructors
Steve Wardell and Jim Dwyre, Clean Waters

Location
Binghamton/Johnson City Joint WWTP, 4480 Vestal Rd., Vestal, NY

Contact Hours
Requested: RTC & PDH pending

Cost
Members $60
Non-members $145 (includes 1 year affiliate membership)

Time
8:00 am-4:00 pm

Course Schedule

This presentation is designed to teach operators how to get the most value out of these costly chemicals. Attendees will learn how polymer works, how to optimize dosing, polymer make-down, storage, clean-up, and much more. Examples will be provided of municipalities that have been able to reduce their polymer use by making small changes in their process.

Presentation 2. Phosphorus Removal
This presentation will cover several current chemical methods to remove phosphorus and their pros and cons. There will also be a discussion about different phosphorus sources and ideas on minimizing PO₄ introduction into a wastewater system.

Presentation 3. The Current State of the Chemical Industry
Jim and Steve will present a current market report on wastewater treatment's most commonly used chemicals. Costs have significantly escalated on many chemicals, and this short presentation will provide a glimpse into the chemical industry and what we may expect for price escalations during this year.
### Biohazards of Water/Wastewater Work

- **Instructor:** Nellie J. Brown, MS, CIH; Cornell ILR School
- **Location:** Van Lare Water Resource Recovery Facility
- **Contact Hours:** 6 RTC (RTC-23673-23)  
  1.5 ATC (ATC# 152-9711-21646)
- **Cost:**  
  - Members $40  
  - Non-members $40
- **Time:** 8:00 am-4:00 pm

#### Course Schedule

<table>
<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>8:00 am-8:30 am</td>
<td>Registration/Sign-in</td>
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</table>
| 8:30 am-10:00 am| **Biohazards in Water & Wastewater**  
  - Routes of entry and body defenses and vulnerabilities  
  - Types of biological exposures in water, wastewater, and sewer work and their hazards  
  - Where exposure occurs in the treatment process  
| 10:00 am-10:15 am| Break                                                                   |
| 10:15 am-12:00 pm| **Biohazards in Water & Wastewater (continued)**  
  - Small Groups Exercise  
  - Blood borne Pathogens  
  - What are the blood borne pathogens  
  - Routes of exposure, occupational and nonoccupational  
  - OSHA regulations  
  - Who is at risk and why; epidemiology  
| 12:00 pm-1:00 pm | Lunch                                                                   |
| 1:00 pm-2:15 pm | **Blood borne Pathogens (continued)**  
  - Diagnosis and treatment  
  - Protection and prevention: controls, protective equipment  
  - Postexposure issues  
  - Exercise: Turning Point interactive slides with audience response system  
  - Small Groups Exercise: Case History  
  - Small Groups Exercise: Scenarios  

(continued)
**Poliovirus**
Background on current outbreak
Regulations and recommendations
Routes of exposure
Basics and updates

2:15 pm–2:30 pm  Break
2:30 pm–4:00 pm  Occupational exposure risks and protection/prevention

**Influenza**
Background on current outbreak
Regulations and recommendations
Routes of exposure
Basics and updates
Occupational exposure risks and protection/prevention

4:00 pm  Workshop evaluation
May 8

**Wastewater Microbiology Workshop**
(Attendees are in person, presenter is remote.)

**Instructor**
Ryan Hennessy, Ryan Hennessy Wastewater Microbiology

**Location**
Van Lare Water Resource Recovery Facility

**Contact Hours**
4 RTC (RTC-17996-23)

**Cost**
- Members $90
- Non-members $175
(Registration includes Wastewater Microbiology Textbook)

**Time**
8:30 am-1:45 pm

**Tentative Agenda**
- Power Point Presentation: Introduction to Wastewater Microbiology
- Lower Power Microscopy Evaluation
- Filamentous Bacteria Morphotype Identification
- Group Viewing of Wastewater Samples*
- Discussion of Various Operational Control Strategies and Troubleshooting Techniques

*Operators in the class can send mixed liquor samples at least 1 week prior to class and note on chain of custody form if you would like your sample to be used for live streaming in the classroom. Website with sample mailing instructions: [https://rhwastewatermicrobiology.com/](https://rhwastewatermicrobiology.com/)
May 8

Wastewater Microbiology Workshop
(Attendees are in person, presenter is remote.)

Instructor
Ryan Hennessy, Ryan Hennessy Wastewater Microbiology

Location
Van Lare Water Resource Recovery Facility

Contact Hours
4 RTC (RTC-17996-23)

Cost
Members $90
Non-members $175 (includes 1 year affiliate membership)
(Registration includes Wastewater Microbiology Textbook)

Time
8:30 am-1:45 pm

Tentative Agenda

• Power Point Presentation: Introduction to Wastewater Microbiology
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October 19

Mathematics for Water & Wastewater Operators

Instructor  Robert Wither, PE
Location    Bergen Point WWTP
Contact Hours  6 RTC approved (RTC #17997-23)
               6 ATC approved (ATC# 152-7576-21465)
Cost        Members $60
           Non-members $145 (includes 1 year affiliate membership)
Time        8:00 am-4:00 pm

Course Schedule

8:00 am  Registration
8:30 am  Basic Mathematics Review as it pertains to working at a treatment facility
         (Real World/Applied Math or what you should know)
         Decimals, fractions, concentrations, % solids, understanding laboratory results from a mathematics
         perspective, basic equations
10:30 am  Break
10:45 am  Using Mathematics to Better Understand Treatment Plants
         Calculation of unit process and unit operation organic, hydraulic and solids loadings, familiarity with
         standard treatment facility terms and design ranges
12:00 Noon  Lunch
1:00 pm  The importance of mathematics at a Treatment Facility
         Process control and proper dosing and calculation of mass quantities
         Activated Sludge Calculations, Sludge Handling, Flow Measurement
2:30 pm  Break
2:45 pm  Attendees Participation Concerning Their Specific Facility – Discussion and Calculations
3:45 pm  Q & A, evaluations and wrap up
4:00 pm  Class dismissal
June 29

**Biohazards of Water/Wastewater Work**

Instructor: Nellie J. Brown, MS, CIH; Cornell ILR School

Location: Wallkill Golf Club, 40 Sands Rd., Middletown, NY

Contact Hours: 6 RTC (RTC-23673-23)

1.5 ATC (ATC# 152-9711-21647)

Cost: Members $40

Non-members $40

Time: 8:00 am-4:00 pm

**Course Schedule**

8:00 am-8:30 am  
Registration/Sign-in

8:30 am–10:00 am  
**Biohazards in Water & Wastewater**

Routes of entry and body defenses and vulnerabilities

Types of biological exposures in water, wastewater, and sewer work and their hazards

Where exposure occurs in the treatment process

10:00 am–10:15 am  
Break

10:15 am–12:00 pm  
**Biohazards in Water & Wastewater** (continued)

Small Groups Exercise

**Blood borne Pathogens**

What are the blood borne pathogens

Routes of exposure, occupational and nonoccupational

OSHA regulations

Who is at risk and why; epidemiology

12:00 pm–1:00 pm  
Lunch

1:00 pm–2:15 pm  
**Blood borne Pathogens** (continued)

Diagnosis and treatment

Protection and prevention: controls, protective equipment

Postexposure issues

Exercise: Turning Point interactive slides with audience response system

Small Groups Exercise: Case History

Small Groups Exercise: Scenarios

*(continued)*
Poliovirus
Background on current outbreak
Regulations and recommendations
Routes of exposure
Basics and updates

2:15 pm–2:30 pm  Break
2:30 pm–4:00 pm  Occupational exposure risks and protection/prevention

Influenza
Background on current outbreak
Regulations and recommendations
Routes of exposure
Basics and updates
Occupational exposure risks and protection/prevention

4:00 pm  Workshop evaluation
Lower Hudson Chapter

August 10  

Mathematics for Water & Wastewater Operators

Instructor  
Robert Wither, PE

Location  
New Rochelle WRRF, 1 LeFevres Lane, New Rochelle, NY

Contact Hours  
6 RTC approved (RTC #17997-23)
6 ATC approved (ATC# 152-7576-21464)

Cost  
Members $60
Non-members $145 (includes 1 year affiliate membership)

Time  
8:00 am-4:00 pm

Course Schedule

8:00 am  
Registration

8:30 am  
Basic Mathematics Review as it pertains to working at a treatment facility  
(Real World/Applied Math or what you should know)
Decimals, fractions, concentrations, % solids, understanding laboratory results  
from a mathematics perspective, basic equations

10:30 am  
Break

10:45 am  
Using Mathematics to Better Understand Treatment Plants  
Calculation of unit process and unit operation organic, hydraulic and solids loadings,  
familiarity with standard treatment facility terms and design ranges

12:00 Noon  
Lunch

1:00 pm  
The importance of mathematics at a Treatment Facility  
Process control and proper dosing and calculation of mass quantities  
Activated Sludge Calculations, Sludge Handling, Flow Measurement

2:30 pm  
Break

2:45 pm  
Attendees Participation Concerning Their Specific Facility – Discussion and Calculations

3:45 pm  
Q & A, evaluations and wrap up

4:00 pm  
Class dismissal
Western Chapter

June 20

Emergency Preparedness & Crisis Management

Instructor
Nellie J. Brown, MS, CIH; Cornell ILR School

Location
The Grill at the Dome, 175 Brompton Rd., Tonawanda, NY

Contact Hours
Requested: RTC pending

Cost
Members $40*
Non-members $40

*This course is supported in part with funding as part of a NYS DOL HAB grant to the Western New York Council on Occupational Safety and Health (WNYCOSH).

Time
8:00 am-4:00 pm

Course Schedule

(A simultaneous crisis scenario/exercise is interspersed throughout the day.)

8:00 am  Registration
8:30 am  Overview of crisis management
  • The business case for crisis management
    (Exercise: Crisis audit of your facility)
  • Elements of a crisis
  • Crisis planning team
  • Developing the crisis management plan

10:15 am  Break
10:30 am  (Exercise: Crisis preparedness – vulnerability analysis)
  • Phases of a crisis
  Exercise: Signal detection

12:00 pm-1:00 pm  Lunch
1:00 pm  • Planning for recovery
  (Exercise: Recovery plan)
  (Exercise: Identifying stakeholders)
  (Exercise: Prioritizing stakeholders)

2:15 pm  Break
2:30 pm  Communicating during and after a crisis
  • Developing core messages
    (Exercise: Communicating with stakeholders and the media)
  • Critical incident stress and debriefing
    (Exercise: Signs of emotional impact)
  • Learning from crisis

4:00 pm  Course adjourned
### Chlorine Disinfection

**Instructors**  
Gregg Palmer and John Revette, Koester Associates

**Location**  
The Grill at the Dome 175 Brompton Rd., Tonawanda, NY

**Contact Hours**  
Requested: RTC & ATC pending

**Cost**  
Members $60
Non-members $145 (includes 1 year affiliate membership)

**Time**  
8:00 am-4:00 pm

#### Course Schedule

(A simultaneous crisis scenario/exercise is interspersed throughout the day.)

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30 am</td>
<td>Introductions</td>
</tr>
<tr>
<td>8:45 am</td>
<td>Disinfection Regulations</td>
</tr>
<tr>
<td>9:30 am</td>
<td>Gas Chlorination</td>
</tr>
<tr>
<td>10:30 am</td>
<td>Break</td>
</tr>
<tr>
<td>10:45 am</td>
<td>Liquid Hypochlorite Disinfection</td>
</tr>
<tr>
<td>12:00 pm</td>
<td>Lunch</td>
</tr>
<tr>
<td>1:15 pm</td>
<td>Sodium Hypochlorite Onsite Generation</td>
</tr>
<tr>
<td>2:15 pm</td>
<td>Chlorine Analyzers</td>
</tr>
<tr>
<td>2:45 pm</td>
<td>Break</td>
</tr>
<tr>
<td>3:00 pm</td>
<td>Chlorine Control Systems</td>
</tr>
<tr>
<td>3:30 pm</td>
<td>Chlorination Ethics Case Studies</td>
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<tr>
<td>4:00 pm</td>
<td>Adjourn</td>
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March 30

All Chapters – Virtual Training via Zoom

Decarbonizing WWTPs Through Onsite Use of Biogas for Resilient Electric and Thermal Production Using Combined Heat and Power

Instructors
Thomas Bourgeois, Director of the US Department of Energy’s Northeast CHP;
Daniel Robb, Engineering Supervisor at Frontier Energy, Cazenovia, NY;
Dr. Beka Kosanovic, University of Massachusetts, Amherst;
Gearoid Foley, CHP Systems Corp.

Location
Virtual

Contact Hours
1 RTC & 1 PDH

Cost
$20 Members & Non-members

Time
9:00 am-10:00 am

Course Schedule
Wastewater Treatment Plants offer a unique opportunity to integrate a CHP system as part of a comprehensive strategy to advance important societal, environmental, energy efficiency, infrastructure resiliency and GHG goals. DOE’s CHP TAPs promote and assist in transforming the market for CHP, district energy technologies/hybrid systems. As leading experts we work with sites to screen for CHP opportunities as well as provide advanced services to maximize the economic impact and reduce the risk of CHP

Decarbonizing WWTPs through onsite use of Biogas with CHP delivers resilient electric and thermal production, with numerous critical societal co-benefits. The US DOE’s Combined Heat and Power Technical Assistance Partnerships (CHP TAPs) work with sites to screen for CHP opportunities as well as provide advanced services to maximize the economic impact and reduce the risk of CHP from initial CHP screening to installation. This program will address system size that can be accommodated taking account of critical site inputs. The program will draw on observations from a rich repository of US DOE tools and initiatives. These include the CHP eCatalog, the Sustainable Wastewater Infrastructure of the Future (SWIFT) Initiative, and other recent DOE research. The presenters will address the deployment of CHP in tandem with EE projects, onsite solar, WWTP effluent heat recovery and thermal energy networks. We will make use of exemplary case studies available at the Better Buildings / Better Plants Energy Solutions Center and cover important ancillary benefits – beneficial reuse, diversion of organic wastes from landfills.
All Chapters – Virtual Training via Zoom

March 2

Confined Space Awareness

Instructor
Nellie J. Brown, MS, CIH; Cornell ILR School

Location
Virtual

Contact Hours
2 RTC Wastewater Operator Hours (RTC-17995-23)
2 ATC Water Operator Hours (ATC# 152-8918-21413)

Cost
FREE

Time
9:00 am-11:00 am

*This program is FREE to attend due to funding support as part of a NYS DOL HAB grant to the Western New York Council on Occupational Safety and Health (WNYCOSH).

This two hour webinar provides an overview of confined space, the types of confined space hazards, protection and prevention for water and wastewater operators.

COURSE AGENDA
• Overview of the problem: what is a confined space? How serious is the issue?
• Requirements of the standard; permit-required vs. nonpermit-required spaces
• Types of confined space hazards
• Protection and prevention by permit entry procedures
April 4

Occupational Stress

Instructor
Nellie J. Brown, MS, CIH; Cornell ILR School

Location
Virtual

Contact Hours
2 RTC (RTC-18000-23)

Cost
Members $20
Non-members $20

Time
9:00 am-11:00 am

COURSE AGENDA

• Exercise: Job demands v. job control
• What is stress? Stress is “remembered”
• Exercise: Memory and emotion
• Stress: Acute v. chronic
• Exercise: How do you feed your stress?
• What the organization can do to reduce stress
• What we can do for ourselves to reduce the effects of stress
• Exercise: How do you cope with the stress in your life?
• Humor – Find ways to laugh more (real or faked, it works)
• Exercise: What makes you laugh out loud?
• Exercise – Any is valuable; make time for at least the minimum amounts that can make a difference
• Sleep – Determine your real sleep need and get enough
• Exercise: How many hours a night do you sleep?
• Recreational activities, hobbies, outside interests, lifelong learning – do things that make you lose track of time
• Exercise: What “flow” activities do you do?
• Social support/family environment (including pets)
• What if your personal strategies are not enough?
### All Chapters – Virtual Training via Zoom

**July 25**

**Fundamentals of Occupational Chemical Exposure for Water & Wastewater Operators**  
**Part 1**

**Instructor**  
Nellie J. Brown, MS, CIH; Cornell ILR School

**Location**  
Virtual

**Contact Hours**  
Pending

**Cost**  
FREE*

**Time**  
9:00 am-11:00 am

*This program is FREE to attend due to funding support as part of a NYS DOL HAB grant to the Western New York Council on Occupational Safety and Health (WNYCOSH).

This two part webinar will cover the fundamentals of occupational chemical exposure for water and wastewater operators.

**COURSE AGENDA**

- Physical hazards of chemicals: fundamentals, terms, applications
- Health hazards of chemicals: fundamentals, terms, applications
- Routes of entry
- Factors affecting adverse health effects from exposure
- Fate of chemicals in the body
- Acute and chronic exposure
July 27

Instructor
Nellie J. Brown, MS, CIH; Cornell ILR School

Location
Virtual

Contact Hours
Pending

Cost
FREE*

Time
9:00 am-11:00 am

*This program is FREE to attend due to funding support as part of a NYS DOL HAB grant to the Western New York Council on Occupational Safety and Health (WNYCOSH).

This two part webinar will cover the fundamentals of occupational chemical exposure for water and wastewater operators.

COURSE AGENDA

• Acute and chronic exposure (continued)
• Using MSDS information to compare risks and find safer alternatives
  - Water solubility
  - Vapor hazard ratio
  - Flash point and explosive limits
  - Hierarchy of controls: ventilation, PPE, work practices
December 5

**Instructor**
Sara Martin, Critical Path Engineering Solutions

**Location**
Virtual

**Contact Hours**
Requested: 1 RTC & 1 PDH

**Cost**
$20 Members & Non-members

**Time**
12:00 pm-1:00 pm

**Course Description**

The basis of design phase of a project is the most important part of the project. The basis of design phase sets the road map for future design activities and acts as a stage gate for final project approval and budgeting. It can be quite overwhelming for engineers to think of everything at this stage of the project that can impact cost surety, however, with prioritization of the most impactful design aspects this task can be lessened. This presentation will cover the initial phases of the project that lead up to the basis of design and what an engineer can do in the initial phases to drive customers to decision points to avoid rework at the basis of design level. The presentation will then cover important aspects of the basis of design and level of completion each discipline should be driving towards at the completion of the basis of design phase. This presentation will also cover the general project engineering design and delivery process, importance of documentation of all decision points and assumptions made during the basis of design phase, and cost estimating level of accuracy expected at each stage of the project according to industry standards.
Biosolids Management

Instructors
Kristina Gerber, Veolia WTS
Sanjeev Verma, Centrisys

Location
Virtual

Contact Hours
Requested: 2 RTC & 2 PDH, pending

Cost
$20 Members & Non-members

Time
9:00 am-11:00 am

Part 1
Wastewater treatment plants are servicing our communities and protecting our planet by producing clean water. At the same time, North American treatment plants are producing millions of tons of biosolids that need to be properly managed. Biosolids management strategies are moving towards more sustainable solutions based on circular economy by using technologies to reduce production cost, raise the value of the final product and reduce greenhouse gas emissions.

The same strategy is not always the best solution for every plant, but affordability, safety, complexity and reliability have been frequent barriers to improve biosolids treatment processes with new technologies and improve management strategies.

This presentation will discuss solutions for dewatering focusing on the low temperature thermal dryer process, energy requirements, Class A product, comparison to other dewatering technologies, and the impacts on carbon footprint. With the Evaporis LT (low temperature) dryer, the process has the lowest energy usage with the highest quality medium density dried product. The process virtually eliminates the potential for combustible dust particulate and is intrinsically safe. This system has a unique modular concept with high adaptability, reliability, and could be a good fit for municipalities unsure of how to handle their biosolids.

Part 2
Low Temperature belt dryer: with increasing challenges around biosolids management; small to mid-sized facilities are faced with critical decisions when seeking options for solids minimization. Low temperature belt dryers offer such facilities a lasting option. It is also an option that is more in line with their facilities with limited resources while providing the most likely solution for reusing secondary sources of heat and achieving substantial solids minimization and consistently achieving Class A biosolids. A low Temperature belt dryer also makes sense for an increasing number of facilities as this would be the pretreatment for subsequent processing of their biosolids, including pyrolysis, should they wish to consider additional treatment down the road.
Faculty and Course Titles

Anaerobic Digestion & Biogas Safety
Sara Martin is a licensed professional engineer with over 20 years of experience in project development, management and design of various municipal and industrial water, wastewater and utilities projects. Sara attended Clarkson University where she obtained a B.S. degree in Civil/Environmental Engineering. She is the owner of Critical Path Engineering Solutions, PLLC, a Woman-Owned Business Enterprise specializing in water, wastewater, and general infrastructure projects.

Mark Greene, PhD, is a Subject Matter Consultant. He has over 40 years of experience in the areas of municipal and industrial wastewater treatment, anaerobic digestion for biosolids and high-strength industrial wastewater, as well as environmental process research and development. He has performed original research, project management, technical guidance, feasibility evaluations, treatability studies, field demonstrations, full-scale start-ups, and computer modeling.

Frank DeOrio is a Senior Technical Director with US Water. He has over 40 years of experience in municipal and industrial wastewater treatment including biological and physical-chemical processes, biosolids management, effluent disinfection and anaerobic digestion. He maintains a Professional Wastewater Operator Certification by the Association of Boards of Certification as well as wastewater operator certifications in the states of GA, NY, NJ, PA and MA.

Amy Weils is a Water Resources Engineer with Barton and Loguidice and a NYS-licensed Professional Engineer. She has a Bachelor of Science in Environmental Engineering from Clarkson University. Amy's experience includes municipal and industrial wastewater treatment process design, anaerobic digestion design, and process modeling.

Confined Space, Occupational Health, Biohazards of Water/Wastewater, Emergency Preparedness
Nellie J. Brown, MS, CIH, is the Director of Workplace Health and Safety Programs for the Worker Institute at Cornell University's School of Industrial and Labor Relations. She is a certified industrial hygienist, biologist and chemist. She earned her Master's degree in a multidisciplinary program in natural sciences and applied science from the SUNY College at Buffalo. She has experience as a licensed wastewater treatment plant operator and has been trained as a lead inspector, an HIV/AIDS test counselor and in mold investigations and site assessments.

Chlorine Disinfection
Gregg Palmer is an active NYWEA member who has successfully led strategic sales and business development efforts in the municipal market for over 20 years. Gregg went to the Metropolitan University of Denver after which he began his career with Poly Processing Company. As National Sales Manager he developed a successful sales and marketing strategy that led the company to become an industry leader in chemical storage systems. Gregg is the President of Koester and Associates and has been involved in dozens of chlorine disinfection projects from evaluation through construction.

John Revette, PE BCEE, has 18 years of experience in the Water and Wastewater Industry. He graduated with a BS from Clarkson University and with an MS from Johns Hopkins University. John worked as a consulting Engineer in the water and wastewater industry for 18 years before joining Koester and Associates as Inside Sales Engineer. He has completed evaluations, studies, and design and construction on a number of chlorine disinfection projects. When he's not working, you'll find John chasing around four kids, a basketball, or maybe running from the tree he just tried to cut down.

Strategic Energy Management
Ken Scherrieble is the president of the Camden Group and is a 4A certified operator with over 30 years of experience working with numerous communities and private industries to assess their
water/water resource recovery needs and deploying teams of highly trained industry professionals to assist clients in identifying deficiencies and developing/implementing plans to address those deficiencies. Mr. Scherrieble oversees a team of over 100 water/water resource recovery and infrastructure professionals providing a variety of services from facility start up, management, consulting and full scale operations of all size water and water recovery facilities. He is the Supervising Chief Operator of the City of Oswego's two 4A facilities as well as the City of Auburn and the City of Ithaca. Mr. Scherrieble also oversees the management of the company’s infrastructure division which provides full scale I&I removal, water remediation, soil stabilization and specialty coatings of client infrastructure.

Polymers, Phosphorus Removal, and the State of Chemical Industry
Steve Wardell is the owner of Clean Waters and has been helping systems with their polymer programs for over 30 years. Steve has worked with systems as small as a single sludge drying bed and as large as New York City. He is writing a book on all things polymer for operators, which will be published later this year.

Decarbonizing WWTPs Through Onsite Use of Biogas for Resilient Electric and Thermal Production Using Combined Heat and Power
Thomas Bourgeois is the Director of the US Department of Energy's Northeast CHP (Combined Heat and Power) Technical Assistance Partnership based at Pace University. Tom has researched and written extensively on the market conditions, market potential, and regulatory, market and technical barriers to microgrids, CHP, distributed generation, demand response, and renewable energy. He served as co-chair of the New York City Mayor's Office of Long Term Planning's Distributed Generation (DG) Working Group, from March 2012 to June 2013, and has provided testimony to multiple New York agencies on energy related matters. Tom has been a principal investigator or contributing author for more than a dozen research studies performed for such organizations as New York State Energy Research & Development Authority (NYSERDA), U.S. Department of Energy, Oak Ridge National Labs, and National Association of State Energy Offices. In 2008, Tom was recipient of the CHP Champion Award, presented by the U.S. CHP Association, the trade association for the CHP industry. He has been contributing author on numerous briefs and other submissions to the Public Service Commission in New York and the Department of Public Utilities in New Jersey. Tom holds a Masters in Regional Planning from University of North Carolina–Chapel Hill and has completed all Ph.D. coursework and qualifying examinations in Managerial Economics at Rensselaer Polytechnic Institute (Troy, NY).

Daniel Robb is the Engineering Supervisor at Frontier Energy in Cazenovia, NY. He has performed building energy audits, commercial and industrial energy efficiency and incentive application review, remote site monitoring, and data analysis since 2009. He has conducted energy analyses and performed monitoring services for over 100 combined heat and power (CHP) systems under the NY-SERDA Performance Program, NYSERDA Catalog Program, multiple Massachusetts utility programs, and for numerous private clients. These services have included feasibility studies, performance monitoring, and retro-commissioning. He has assessed various energy conservation measures under NYSERDA’s Existing Facility Program (EFP) and Industrial Process Efficiency (IPE). He has also assisted in numerous energy audits, including the campus-wide energy assessment performed for the City University of New York.

Daniel is also an expert in anaerobic digester gas systems – having performed technical review of applications; written monitoring and verification or quality assurance and quality control plans; and designed, installed, and verified monitoring systems for over 30 systems on the NYSERDA DER Integrated Data System website. Recent work has included emissions assessments of various energy systems as well as research, technology and market assessments, and M&V activities for low carbon fuels such as renewable natural gas and green hydrogen.
Dr. Beka Kosanovic is a research professor in the Mechanical and Industrial Engineering Department at the University of Massachusetts at Amherst. He is an assistant director of the US DOE New York – New Jersey CHP Technical Assistance Partnership and the director of the Industrial Assessment Center.

Dr. Kosanovic has completed CHP assessments totaling more than 100 MW in capacity for industrial, commercial and institutional facilities. These assessments resulted in projects totaling 30.6 MW. He has been leading energy conservation studies at industrial facilities for over 25 years. and has completed over 700 facility energy assessments. The implemented measures are saving annually more than 120,000,000 kWh of electricity and more than 1,200,000 MMBtu of fossil fuel which corresponds to annual CO₂ emission reductions of over 180,000 tons, NOx of almost 300 tons and SO₂ of more than 1,000 tons.

Gearoid Foley has worked for the past three decades in the construction, HVAC and onsite power industries. He has collaborated with the Department of Energy, various public utility and state energy agencies, project developers, energy service companies and major equipment manufacturers among others. His experience includes new technology demonstration, applications engineering, project management and policy development relating to on-site power generation, energy efficiency, microgrids and energy resiliency. Mr. Foley has presented papers and given seminars at national and regional conferences for multiple organizations.

Mr. Foley founded Integrated CHP Systems Corp. in 2003 which provides consulting services to the on-site energy industry. He is a founding member of the US CHPA, Programs Committee Chair of ASHRAE’s Combined Heat & Power System’s technical committee and is the New Jersey Director and a Senior Technical Advisor for DOE’s CHP Technical Assistance Partnership. He coauthored the 2015 ASHRAE CHP Design Guide as well as a recently published book entitled ‘Sustainable On-Site CHP Systems’.

**Biosolids Management**

Kristina Gerber is the Domain Leader for Anaerobic Digestion at Veolia Water Technologies & Solutions. She has been in the wastewater and biosolids industry for over 15 years with a BS in Chemical Engineering, MS in Engineering Management as well as being a Professional Engineer. Kristina started out as a pilot/lab tech with her career path extending to project engineering, project management, proposals manager and now technically supporting commercial teams. She is passionate about the environment, sustainability, and providing biosolids and wastewater solutions for clients.

Sanjeev Verma has over three decades in the water and wastewater industry, with a track record of working with engineers and end users collaborating to find solutions to their challenges. He has worked with municipalities of all sizes and has a keen understanding of their challenges and working with them to find sustainable and lasting solutions. Verma has a Masters in Business Administration from DePaul Driehaus College of Business and a Bachelor of Science in Chemical Engineering from Punjab University.

**LOGISTICS**

Cancellations must be received 10 days in advance of event. Refunds are subject to a $20 administrative fee.