

FALL
2022

The Official Publication of the Water Environment Association of Utah

DIGESTED news

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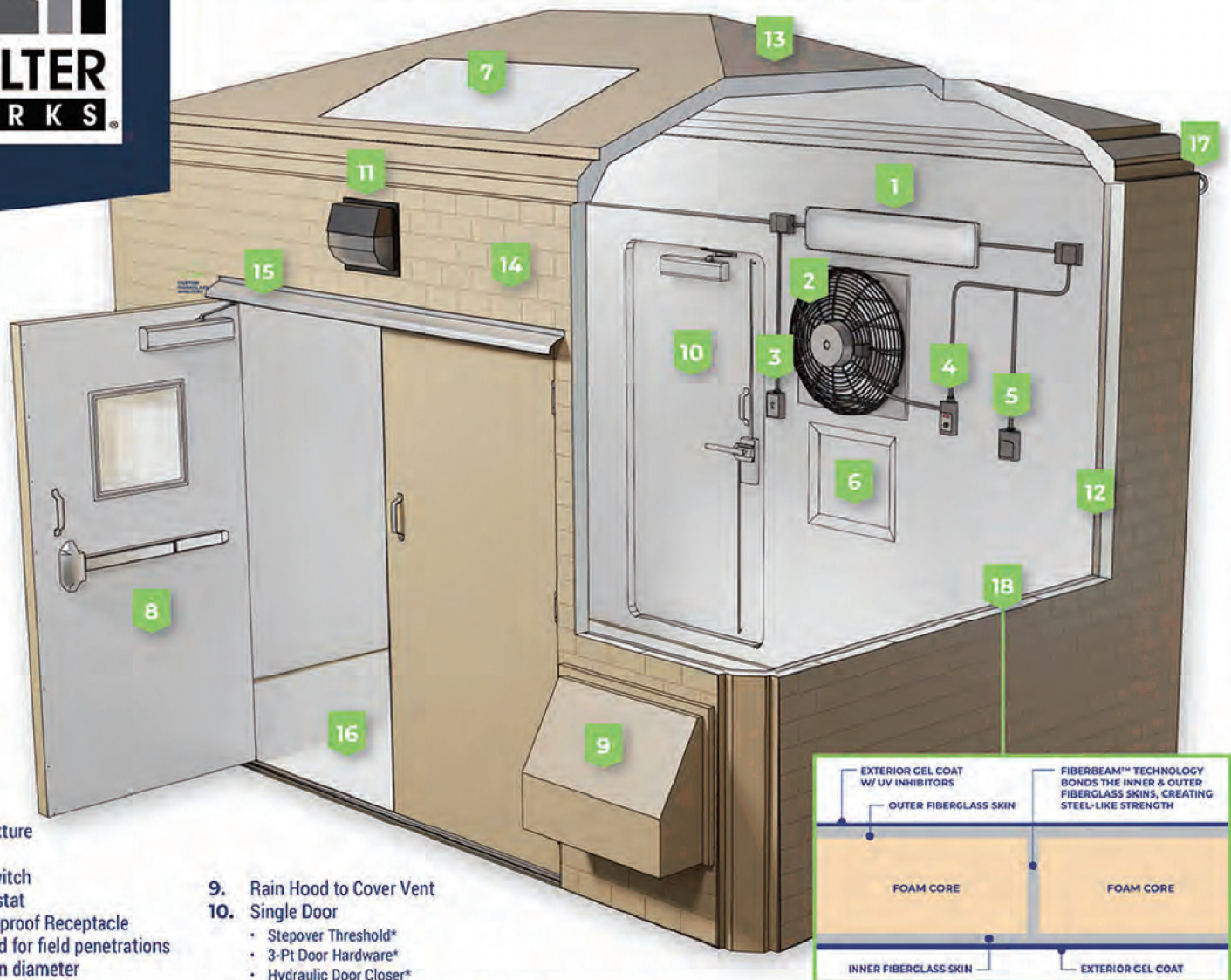


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Working Together



Sarah Ward

After the Annual Conference, the WEAU Board held a committee chair leadership retreat in June. It was nice to see board members and committee chairs work together to solve problems and gain insight into ways to work together. The board is holding additional leadership training for all committee members in October. The training will expand on the June training and will go into more detail on how we can work together as an organization and within our place of employment.


The WEAU committees have been hard at work planning trainings and events. I am always impressed with the efforts made by committee chairs to pull off training and events. If you are interested in becoming part of any committee, please contact me and I will find a committee that could use your expertise.

The Mid-Year Conference is almost upon us. I look forward to seeing many of you on November 15 as we gather for learning and networking.



I have enjoyed reading the nominations received for the Mentor Recognition. Our organization has many individuals who have reached out to others by providing a helping hand, a word of advice, and being kind and understanding. Nominations will continue to be accepted. WEAU will recognize the mentors at the Mid-Year Conference and Annual Conference. Please submit your nomination through an online form at <https://forms.gle/x7r4srmbdajcgwkea> or by scanning the QR code.

Thank you for being a member. We are great because of each of you.

Sincerely,
Sarah Ward 

“ The WEAU committees have been hard at work planning trainings and events. I am always impressed with the efforts made by committee chairs to pull off training and events. If you are interested in becoming part of any committee, please contact me and I will find a committee that could use your expertise.



Pooping in the Woods

Bryan Mansell

A few years ago, my wife and I started a family tradition of taking our four kiddos backpacking over Labor Day weekend. I've been backpacking many times before, including with teenage scouts, but up to that point, I had never taken a four-year-old. When we tell people about our plans each year, or pass others on the trail, there is understandably a little bit of concern for our sanity in their eyes. Despite that, it's brought great memories and time for us to bond as a family with no distractions; so we continue to do it. I have an easy, effective water system figured out and we've invested in gear that helps us be reasonably comfortable but there's no getting around the need to manage our family's excrement. Thankfully, there are a variety of environmentally responsible ways of doing that, such as bags to haul it out where required (or where a lot of people frequent the area) or digging suitable cat holes. There are also a lot of options for positioning yourself for aim and efficiency. Since fall is a nice time to get out and explore the mountains, I'll share a few of these that I've learned about or tried myself, so that you too can enjoy the experience of pooping in the woods.

1. Free Squat: as the name implies, you simply squat.

- a. Pros – Simple.
- b. Cons – Aim and balance required, decent likelihood of missing your cat hole or bag.

2. Break Dance: more stable form of free squat with one hand on the ground behind.

- a. Pros – Simple.
- b. Cons – Aim and balance required, decent likelihood of missing your cat hole or bag.

3. Tripod or Pole Dance: essentially the free squat while holding onto a tree trunk allowing you to keep your legs and pants out of the way.

- a. Pros – Distance from tree make digging hole easier, arm support to reduce thigh fatigue.
- b. Cons – Potential for tree sap or other stuff on hands.

4. Tree Squat: Leaning backward against a tree.

- a. Pros – Well supported for balance.
- b. Cons – Difficult to dig hole against tree, major thigh workout.

5. Throne: dig a deeper narrow hole and move large rocks on either side to fashion a 'toilet seat'.

Most suitable if planning to stay in one area and can dig a deep, multi-use hole.


- a. Pros – Potentially more comfortable, can accommodate your reader's digest.
- b. Cons – Initiative is required before nature calls, skin contact with rocks.

6. Log Over Log: Sitting over a fallen tree trunk or log.

- a. Pros – Reasonably well supported.
- b. Cons – Suitable footing required for overhang, direct thigh/cheek contact with log and everything crawling on it.

7. Lazy: Standing in a slight squat, with or without tree support

- a. Pros – Simple, less thigh fatigue
- b. Cons – High likelihood of having to change clothes afterward.

I see my responsibility and opportunity out in the woods with my family like the that of our industry. We help society manage a part of humanity that most other don't want to think about, let alone talk about, in a way that helps mitigate its effect on the environment, minimize odors, and maintain the ability of people to be sanitary. There are a variety of ways to go about it, and most by-in-large work well thanks to the dedication of so many to make it all happen. I'm proud to be part of that effort and am so impressed by the members of WEAU, especially the many folks who volunteer consistently to help each other and our industry to succeed. 

“ We help society manage a part of humanity that most other don't want to think about, let alone talk about, in a way that helps mitigate its effect on the environment, minimize odors, and maintain the ability of people to be sanitary.

FIND THE HIDDEN GOLDEN SLUDGE SHOVEL!*

Each quarter, *Digested News* has this golden sludge shovel icon hidden somewhere in the content of its pages.

Be the first to find it and email the editor (digestednews@weau.org) the correct page number to **win a \$25 Amazon Gift Card.**

Emails should include:

- Subject: I found the golden shovel
- Correct page number
- Your name and work address

Winners will be notified directly and named in the next issue of *Digested News*.

*For those of you new to WEAU, volunteers who give notable time and service to WEAU are awarded a “5S” golden lapel pin shovel. With that award, they become members of the **Select Society of Sanitary Sludge Shovelers**. WEAU is always looking for volunteers and maybe one day, you too can become a 5S member. [5S](#)

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This Quiz Will PUMP You Up!

By Lonn Rasmussen

1. **Lift stations are generally classified as either of two types?**
 - A. Centrifugal or Suction Lift
 - B. Submersible or Dry Pit
 - C. Kinetic or Flooded Suction
 - D. Dry Pit or Suction Lift
2. **Submersible lift stations are noted because the pumps are located _____.**
 - A. Above ground
 - B. In a vault
 - C. In the dry pit
 - D. In the wet well
3. **What helps to create the discharge seal on a submersible pump?**
 - A. The weight and cantilever of the pump
 - B. The PSI of the discharge line
 - C. The head pressure on the discharge line
 - D. The stuffing box
4. **To pull a submersible it must be unbolted from the discharge flange.**
 - A. True
 - B. False
5. **The piping on the discharge side of the lift station is called the _____.**
 - A. Receiving pipe
 - B. Force main
 - C. High Pressure pipe
 - D. Outfall main
6. **A lift station check valve that closes too fast can result in _____.**
 - A. Broken impellor
 - B. Cavitation
 - C. Water hammer
 - D. Seal failure
7. **Friction losses in piping are caused by _____.**
 - A. Outside pipe roughness
 - B. Poor installation
 - C. A half full pipe
 - D. Velocity of the wastewater
8. **What is the cycle time given the following data the wet well volume is 200.5 cubic-feet the pump capacity is 200 gpm and the inflow is 100 gpm?**
 - A. 15 minutes
 - B. 20 minutes
 - C. 25 minutes
 - D. 30 minutes
9. **The lowest level a wet well can be pumped down to is determined by the center line of the volute or _____, whichever comes first.**
 - A. 2"
 - B. 2.5"
 - C. 3"
 - D. 3.5"
10. **Impellers are sized at _____, as this is what the standard toilet will pass through.**
 - A. 2"
 - B. 2.5"
 - C. 3"
 - D. 3.5"



Answers

1-B, 2-D, 3-A, 4-B (False), 5-B, 6-C, 7-D, 8-A, 9-Vortex creation, 10-B.



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Certification Preparation Quiz

By Dan Olson

1. **Natural systems have enough assimilative capacity to treat wastewater from urban areas.**
 - A. True
 - B. False
2. **Wastewater treatment is necessary to protect public health and the environment.**
 - A. True
 - B. False
3. **The term water resource recovery facility (WRRF) was recently adopted by Water Environment Federation because it better reflects our goals as a profession.**
 - A. True
 - B. False
4. **Most of the fats, oils, and grease present in influent wastewater come from petroleum products.**
 - A. True
 - B. False
5. **A pathogen is _____.**
 - A. A bacteria or virus found in wastewater
 - B. Any organism capable of causing disease
 - C. Unable to survive for long periods outside wastewater
 - D. Dependent on TSS to reproduce
6. **Solids that are retained by a 1.2- μ m filter paper and are burned away in a 550oC furnace are _____.**
 - A. Total dissolved solids (TDS)
 - B. Total volatile solids (TVS)
 - C. Total volatile suspended solids (TVSS)
 - D. Total non-volatile dissolved solids (TVDS)
7. **The biochemical oxygen demand (BOD) test measures _____.**
 - A. Biodegradable organic material
 - B. Percentage of organic suspended solids
 - C. Quantity of live bacteria
 - D. Amount of oxygen need to stabilize wastewater
8. **Solids that are able to pass through a 1.2- μ m filter paper and remain unchanged after spending time in a furnace at 550°C may be described as _____.**
 - A. Dissolved and inorganic
 - B. Suspended and inorganic
 - C. Dissolved and organic
 - D. Suspended and organic
9. **Some treatment facilities are required to remove ammonia as part of their discharge permits for this reason.**
 - A. There is a safe drinking water limit for ammonia
 - B. Ammonia reacts with organic matter in natural systems to form mustard gas
 - C. To protect downstream agricultural users from over fertilizing crops
 - D. Ammonia is toxic to fish and aquatic life
10. **The biochemical oxygen demand (BOD) test is typically performed as a five-day test for this reason.**
 - A. It only takes the Thames River five days to reach the ocean
 - B. The bottles only hold enough dissolved oxygen for a five-day test
 - C. The bacteria only live for five days
 - D. All of the organic material is consumed within five days
11. **By definition, how much oxygen is required to stabilize or treat 1 kg of BOD?**
 - A. 1 kg
 - B. 2 kg
 - C. 3 kg
 - D. 4 kg

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12. Which of the following pollutants is most likely to cause an algae bloom in a lake or river?
- Total suspended solids (TSS)
 - Biochemical oxygen demand (BOD)
 - Phosphorus
 - Turbidity
13. The *Clean Water Act* was promulgated in 1972.
- True
 - False
14. All direct dischargers are required to have a discharge permit.
- True
 - False
15. The discharge permit system depends on accurate self-reporting of effluent quality.
- True
 - False
16. An operator will be fined and serve time in prison if the average effluent suspended solids concentration exceeds the limit given in the discharge permit.
- True
 - False
17. The monthly discharge monitoring report must be signed by the town attorney.
- True
 - False
18. US EPA can set limits for heavy metals, cyanide, volatile organic compounds, and pesticides in direct discharge permits.
- True
 - False
19. A WRRF has a 30-day monthly average BOD5 limit in their permit of 30 mg/L. Two samples were collected in May with results of 28 and 36 mg/L. The operator should _____.
- Report only the first result to remain below the permit limit
 - Average the results together and report a permit violation.
 - Alter the second result to read 26 mg/L and then average the results together.
 - Go back to his office and work on his resume.



20. The secondary treatment standards set effluent limits for these parameters.
- BOD5, CBOD5, TSS, and pH
 - FOG, BOD5, and TSS
 - Nitrogen and phosphorus
 - Pathogenic organisms
21. ABC Corporation manufactures tires in Metro City. All of the process water they generate is discharged to the sewer and is conveyed to the city's water resource recovery facility (WRRF). What type of discharger is ABC Corporation and who issues their discharge permit?
- Direct, US EPA
 - Indirect, state
 - Indirect, US EPA
 - Indirect, Metro City WRRF
22. Another name for a grinder is a comminutor.
- True
 - False
23. A trash rack is a manual bar screen with openings between the bars smaller than 5 mm (0.25 inch).
- True
 - False
24. Which of the following treatment processes would be considered a physical treatment process?
- Grit basin
 - Trickling filter
 - Chlorine disinfection
 - Anaerobic digestion
25. Sanitary sewers receive this type of flow.
- Stormwater only
 - Municipal wastewater only
 - Both stormwater and municipal wastewater
 - Both municipal wastewater and industrial wastewater

NEW

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Answers

1-B (Natural treatment systems have a limited capacity to assimilate pollutants. Urban areas concentrate a large number of people and businesses into a small area and discharge them into one or a few locations. The result is reduced dissolved oxygen, fish kills, and other adverse effects.) 2-A, 3-A, 4-B (Most come from animal sources like bacon), 5-B, 6-C, 7-D, 8-A, 9-D, 10-A, 11-A, 12-C, 13-A, 14-A, 15-A, 16-B (The Federal penalties shown in table 1.2, including jail time, only apply when a person knowingly and willfully falsifies, conceals, or covers up a permit violation or misrepresents a permit violation with fraudulent statements), 17-B (Permit applications and required reports must be signed by an authority state-licensed individual or responsible charge, a principal executive officer, or ranking elected official), 18-A, 19-B, 20-A, 21-D, 22-A, 23-B (Trash racks have wide openings to remove trash and large debris), 24-A, 25-D.

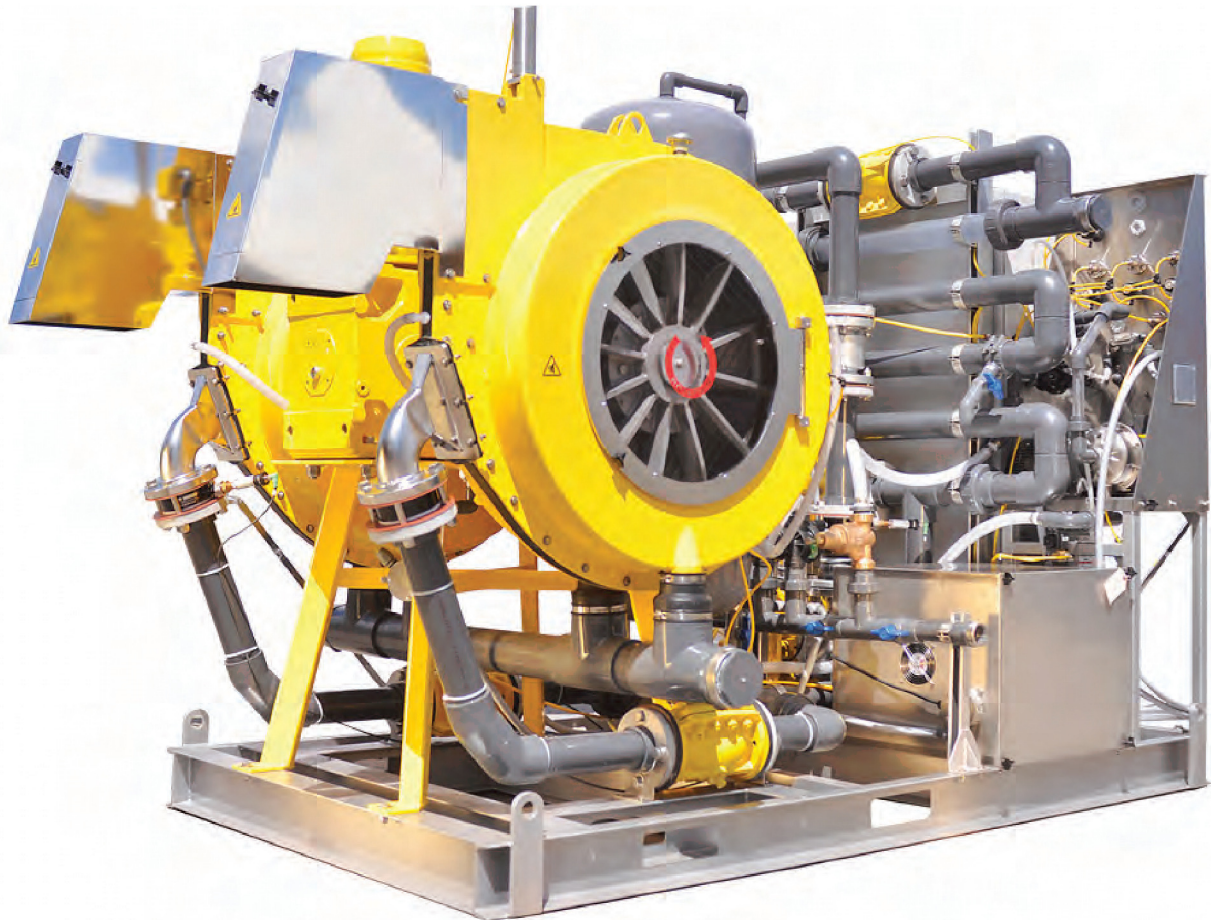


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Two WEAU Teams to Participate in the WEFTEC Operations Challenge

Well, it's that time of the year again where we have people trying to get all the things done that need done as the summer is coming to an end, and Operations Challenge is right in the mix of it all. WEAU has two teams going down south this year to WEFTEC in New Orleans to compete for the title. We have the team from Central Valley WRF, Wasted Gas, who took first place at the WEAU Annual

Conference back in April and the Wasatch All-Stars, a team consisting of five members from various entities who also competed last April.

There is a lot that goes into teams competing in the Operations Challenge, such as teams practicing for days and days beforehand and the entities allowing their staff to have time off-site to prepare. There is a big commitment from

everyone, and we want to thank everyone for all their continued support. I would especially like to thank the operator in this issue's spotlight for all his hard work with the Operations Challenge. There is a lot of behind the scenes work that goes into making the event happen in St. George and at WEFTEC, and he plays a critical role in the success of both. [DN](#)

PWO Spotlight: Hadley Gunn

Hadley Gunn is a maintenance mechanic at Central Valley Water Reclamation Facility, where he has been employed for 12 years. Over those years, he has obtained his Operator Treatment Grade 4 and Maintenance Technician Grade 3 certifications. He's also completed CPR and forklift training and has received his crane operator certificate. Being a Grade 4 mechanic at Central Valley, Hadley has a very wide range of duties, including HVAC work, plumbing, heavy equipment operation and repairs, maintenance, and rebuilding of pumps, gates, valves, etc. Hadley was also awarded Outstanding Maintenance Specialist in 2018.

Over his career, he has been given the opportunity to compete in the Operations Challenge team for six years, competing at WEFTEC for three of those years. That was a great experience to help him grow in the industry and meet a lot of great people. After competing, he became the Operations Challenge Chairman for WEAU. He has been in that position for three years now. This year will also be his third year as a judge at WEFTEC in the safety event.

Outside of work he enjoys hunting, fishing, and camping with family and friends. He has also been competing in horse shows, rodeos, and jackpot roping since he was six years old, as well as training and showing horses with his father since he was 12 years old. Rodeo has given him lot of opportunities growing up. In high school, he was the Utah High School State Rodeo President, competed at High School National Finals Rodeo, and received a full-tuition rodeo scholarship to Cochise College in Douglas, AZ. [DN](#)



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REGISTRATION

Registration information is available at www.weau.org. A continental breakfast and lunch will be provided as part of the registration. 

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8:00-8:30	REGISTRATION AND CONTINENTAL BREAKFAST			
TOPIC	NUTRIENT REMOVAL	OPERATIONS	COLLECTION SYSTEMS	BIOSOLIDS
8:30-9:10	Using UV energized Sulfites for Nitrate Removal from Wastewater	Pride and Progress: Construction Underway on New Spanish Fork WRF	Advanced Lining/OBIC Infrastructure Lining Material	Advantages of Preconstruction Services for Capital Projects: An Electrical Approach
	Marcus Theodore, Earth Renaissance Technologies, LLC	Cory Pierce, Spanish Fork City	Seth Huggins, Advanced Lining, LLC	Michael Hamilton, Skyline Electric Company
TOPIC	NUTRIENT REMOVAL	OPERATIONS	COLLECTION SYSTEMS	PROJECT DELIVERY
9:20-10:00	Tertiary Phosphorus Removal: Implications of Low Total Phosphorus Limits on Process Selection	Clean Water Needs Survey Little Time Left	Blue Stakes: What You Don't Know But Should	Tools to Mitigate Supply Chain and Escalation Challenges
	Alexandre Crozes, Carollo Engineers, Inc.	Harry Campbell, State of Utah, Division of Water Quality	Spence Felsted, Blue Stakes of Utah 811	Bryan Bedell, Haskell
10:00-10:20	BREAK			
TOPIC	NUTRIENT REMOVAL	OPERATIONS	COLLECTION SYSTEMS	ASSET MANAGEMENT
10:20-11:00	Optimizing Polymer Mixing and Activation: Following the Science	What Were You Thinking? NDSD's Inhouse Influent Gate Replacement	HDPE Lined Concrete Pipe, Eliminating Corrosion in RCP Sewer Systems	Assessing the Condition of Electrical and Instrumentation Systems
	Gloria Rock, UGSI Solutions	Myron Bachman, North Davis Sewer District	Brandon Tremelling, Geneva Pipe and Precast, A Northwest Pipe Company	Chris Thunhorst, Hazen and Sawyer
TOPIC	WASTEWATER FACILITIES	OPERATIONS	COLLECTION SYSTEMS	MISCELLANEOUS
11:10-11:50	Adaptive Mixing and Process Optimization with Energy Savings	Time for Water Reuse to Secure Our Future Generations: A Case Study on Provo	How to Inspect, Prioritize, and Rehab Your Sewer Collection System	Becoming an Effective Leader
	Alden Meade, Xylem	Jenny Calderon, Waterworks Engineers	Mark Poppe, Brown and Caldwell	Mike Chandler, Ash Creek Special Service District
12:00-1:20	LUNCH			
TOPIC	INDUSTRIAL WASTEWATER	OPERATIONS	COLLECTION SYSTEMS	MISCELLANEOUS
1:30-2:10	The Ferrous Chloride Treatment Technology: Full-Scale Implementation	Smaller Utilities Face Big Challenges with Direct Potable Reuse	Condition-Based Maintenance for Collection Systems	Leveraging Field Data Technologies: Considerations and Cybersecurity
	Brenden Bingham, Cache Environmental Laboratories, PC	Rob McCandless, Stantec	Eric Peterson, RH Borden and Company	Navneet Prasad, Central Valley Water Reclamation Facility
TOPIC	WASTEWATER FACILITIES	OPERATIONS	PROJECT DELIVERY	SAFETY AND SECURITY
2:20-3:00	PFAS: Industrial Source Control and Wastewater Pre-treatment	Safety's Top 10	Modeling New Capital Projects: The Power of BIM	Preparing Your Laboratory for an Onsite Assessment
	Susan Spore, Brown and Caldwell	Jason Watterson, Utah Local Governments Trust	Monika Surasani, Skyline Electric Company	Tony Francis, SAW Environmental
3:00-3:20	BREAK			
TOPIC	SUSTAINABILITY	OPERATIONS	STUDENT PRESENTATION	WATER QUALITY
3:20-4:00	Implementation of Innovative Technologies in Wastewater	The First IFAS Installation in Montana	Student Presentation	An Anecdotal Look at Utah Lake Pollutant Loading with a Nod to Water Rights and Reuse
	Paula Dorn, Aqua-Aerobic Systems, Inc.	Kelsey Wagner, AE2S	TBA	Shane Jones, Provo City

The content of the technical program is subject to change. Visit www.weau.org for updates.

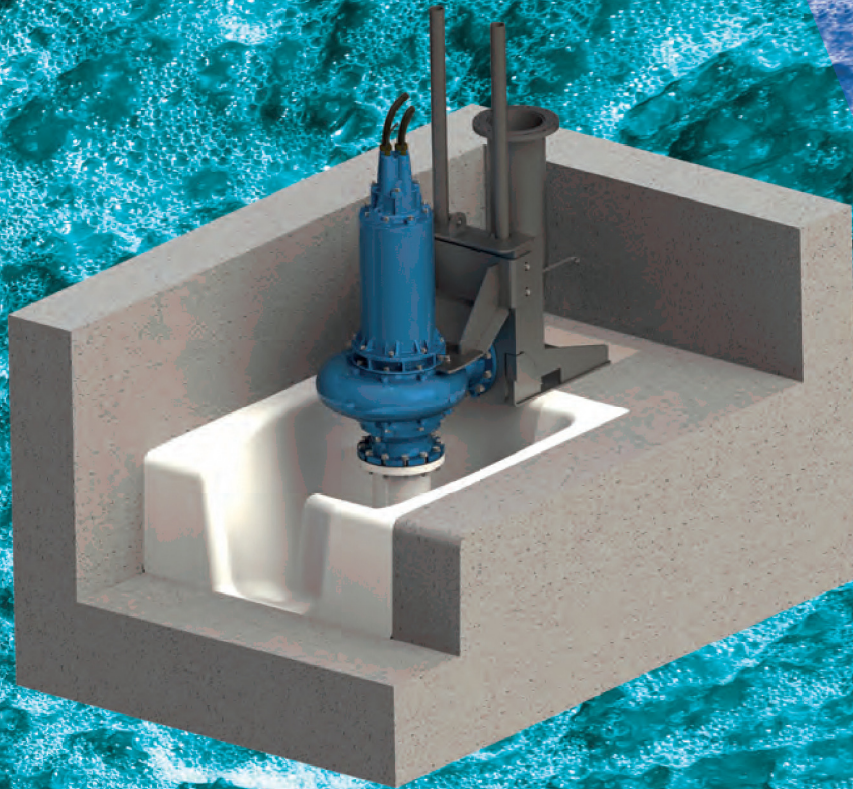


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CATEGORIES

OUTSTANDING PLANT/SYSTEM AWARDS

- Treatment Plant – Under 5 MGD
- Treatment Plant – Over 5 MGD
- Lagoon – Discharging
- Lagoon – Non-Discharging
- Laboratory
- Collections System – Under 5 MGD
- Collections System – Over 5 MGD

OUTSTANDING PROGRAM AWARDS

- Pretreatment Program
- Biosolids Program
- Safety Program

OUTSTANDING INDIVIDUALS AWARDS

- Treatment Plant Operator – Under 5 MGD
- Treatment Plant Operator – Over 5 MGD
- Collections System Operator – Over 5 MGD
- Collections System Operator – Under 5 MGD
- Supervisor
- Pretreatment Specialist
- Maintenance Specialist
- Laboratory Technician
- Young Professional

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WEAU DIGITAL WATER: PROCESS CONTROL ARCHITECTURE AND CYBERSECURITY BASICS SEMINAR

By Navneet Prasad, Digital Water Committee Chair, Electrical Controls Engineer CVWR

The main goal of the Digital Water Committee is to provide WEAU members with insights into new trends in the digital space of the water/wastewater industry, digital transformations happening at POTWs, and new technologies being introduced in the following fields: laboratory instrumentation, controls systems (SCADA, DCS, PLC, HMI), electrical systems, process optimization, energy efficiency, operations and more. With this in mind, the Digital Water Committee organized its first workshop/seminar, held on August 17, hosted at Central Valley Water Reclamation Facility. This training was attended by operators, electricians, mechanics, engineers, university professors, and students. It was great to see such a diverse crowd.

The title of the seminar was Process Control Architecture and Cybersecurity Basics. This topic was picked from the poll that was conducted during the WEAU Annual

Conference this year in St. George, UT. About 85 people voted during the conference with around 15% of the expressing interest in learning more about smart instrumentation and control systems, and around 11% interested in cybersecurity. Our committee decided it will be great to start this workshop series by covering the basics of process control systems and talking about cybersecurity which go hand in hand with operational technology (OT) and information Technology (IT).

We had a great group of presenters with varied backgrounds covering an array of topics during the workshop. Eric Smith, President of APCO Inc., started the proceedings with control systems fundamentals and gave a high-level picture of how the processes work using various control systems and ancillary equipment, how various process instrumentation connects to the control system, how data flows back and forth,

Please select a topic from the list below which you would be interested in attending as a training/workshop organized by the Digital Water Committee:
Posted to Activity Stream

A. Smart Instrumentation & Control Systems 12 Votes	14.6%
B. Smart Electrical & Power Systems 2 Votes	2.4%
C. Integration of IT & OT 2 Votes	2.4%
D. Process Optimization 12 Votes	14.6%
E. Cybersecurity 9 Votes	11%
F. IIOT Devices 0 Votes	0%
G. Digital Transformation 4 Votes	4.9%
H. Plant Standardization 5 Votes	6.1%
I. Data Analytics 4 Votes	4.9%
J. Cellular Networks with SCADA 6 Votes	7.3%
K. High Performance HMI 0 Votes	0%
L. Historical Data Visualization Tools 3 Votes	3.7%
M. Electronic Operations Management 4 Votes	4.9%
N. Engineering Control Systems for Reliability 4 Votes	4.9%
O. Secure Remote Access Methodologies/Best Practices 1 Vote	1.2%
P. Control System Lifecycle Management 4 Votes	4.9%
Q. Backup Processes and Version Control 1 Vote	1.2%
R. Edge Devices and Hybrid Controllers 0 Votes	0%
S. Dashboarding Tools 9 Votes	11%

"THE DIGITAL WATER COMMITTEE DID A GREAT JOB PUTTING THIS WORKSHOP TOGETHER AND WOULD LIKE TO THANK WEAU FOR GIVING US THIS OPPORTUNITY AND HELPING US SET THIS COMMITTEE UP."

and what kind of networks are typically on a site. Thomas Herbert, Application Development Manager with Hach, presented on Instrumentation Basics. He covered topics ranging from sensors, the difference between transmitters and controllers for various instrumentation, communication protocols used (such as Modbus and Ethernet IP), and the future industry trends in this area. Next, Navneet Prasad, Electrical Controls Engineer at Central Valley Water Reclamation Facility, spoke about Electrical Systems Basics. His presentation covered basics about electrical generation and distribution, various distribution electrical systems and equipment on a wastewater plant, basics of circuit protection devices, the importance of electrical safety, the new trends in the industry with respect to electrical systems, and how cybersecurity is playing an important role, even for the electrical system, to keep both systems and people protected.


These topics provided a segway for our next presenter, Jason Stansfield, IT Director of the North Davis Sewer District, to dive into how all the above systems (i.e., operation technology), have started integrating more with information technology (IT). He highlighted how both OT and IT have different architecture, how the integration of the two is critical to cybersecurity and why the way forward requires OT and IT working together in a well-integrated way to solve challenges and protect various business and process systems across wastewater facilities. Following, we had Gage Downing, Business Analyst and Digital Consultant at Stantec Inc, who presented Steps Needed for Digital Transformation. His short presentation was powerful, talking about how entities can take proper steps toward



digital transformation and change the way they think. He spoke about the power of data and how we need to protect it too and why cybersecurity is important in this respect.

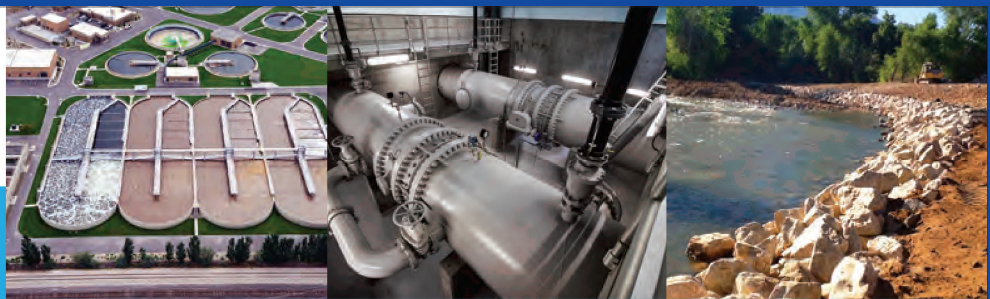
These foundational topics led the way for our guest lecturers to talk more about Cybersecurity and the resources Federal

and State agencies can provide to water/wastewater entities to help them be cyber secure. We had Richard Gardner with Cybersecurity and Infrastructure Security Agency (CISA) present on steps that each individual needs to take to be cyber secure, he also, spoke about what tools and resources CISA can provide to



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Cyber-attacks and breaches occur every single day. Most never make the news, but when they do, they're usually about large well-known international corporations. However, statistics show otherwise. According to Verizon's Data Breach Investigations Report, 71% of the data breaches investigated by the company's forensic analysis unit targeted small businesses with fewer than 100 employees.

The coronavirus crisis has changed the world as we know it. With social distancing, lockdowns, and work from home becoming the new normal, cybercriminals are exploiting the situation. Maise provides our cybersecurity customers with technical support, professional services, and professional accredited support personnel to help with the deployment of our cybersecurity products, troubleshoot issues, and assure peace of mind.

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User Awareness

There are some things that only humans can fix. 95% of all security incidents involve human error. Two of the biggest mistakes a company can make are assuming their employees know internal security policies and assuming their employees care enough to follow policy.

What's the best defense against this one? The single biggest defense is education. Training your people to be constantly wary of all the emails and documents they receive. As part of Maise's Cybersecurity Support, we provide regular training to employees and

To summarize, you need to have a defense plan for each of the layers that a hacker can attack:

The Physical Layer – You need policies to ensure the integrity of your organization

The Network Layer – Make sure that only authorized devices access your network, and your devices only access authorized networks

The Human Layer – You should make your employees practice good password hygiene and are aware of security threats



PUT YOUR HEART INTO IT

By Aimee Matthies

*"THIS IS THE STORY OF HOW I DIED... BUT DON'T WORRY! IT'S A VERY HAPPY STORY." – FLYNN RIDER, TANGLED
WALT DISNEY ANIMATION STUDIOS, 2010*

This last year has brought to the forefront of my mind the necessity of putting my heart into it. And by "it," I mean the top of my list in staying healthy. The past 12 months have been a wild ride for me personally that led to this revelation. In early September 2021, I suddenly found myself waking up in a hospital bed with very little recollection of what was going on. Apparently, I had suffered a massive pulmonary embolism leading to cardiac arrest. A blood clot that I did not know I had, broke free and made its way to my lungs, which caused extreme stress on my heart. Without the ability to pump blood through my lungs, my heart ended up stopping five different times. I was so very fortunate that the paramedics were close to my house and that they, as well as the doctors in the emergency room, were able to save my life!

However, because of these events, I still suffer from some heart and lung damage. I never would have thought that I, at 34 years old, would need to be taking heart medication. Even worse than the new meds, however, was learning just shortly after I woke up that the incredible Paul Krauth had passed away due to a heart attack.

I was shocked and confused. I had just seen Paul approximately a week or so before I went into the hospital. Once I processed my emotions and worked past my lingering confusion of the anesthesia, I vowed to take better care of myself. Although heart attacks can strike anyone at any time, having a healthy heart improves your chances in being spared this fate. So here are some very important, but easy, steps that you can take.



"TAKE FIVE TO TEN MINUTES EACH DAY TO JUST BREATHE. FOCUS ON YOUR BREATHING AND RELAX YOUR SHOULDERS."

LOWER YOUR STRESS

Take five to ten minutes each day to just breathe. Focus on your breathing and relax your shoulders. This can help lower your blood pressure. You can even try yoga, pilates, or tai chi.

INCREASE YOUR MOVEMENT

Just start small. Walk around your plant or your office building during one of your breaks for five minutes. Look for small exercise that sound fun, like gardening, swimming, and walking, then increase your duration of movement over time.

CHECK YOUR CHOLESTEROL

See if you need to reduce your LDL or raise your HDL (bad and good cholesterol respectively). Don't change your diet wildly. Maybe replace one high fat or high sugar meal each week with a healthier homemade alternative when you can.

ADVOCATE FOR YOUR HEALTH

Before my blood clot broke loose, I had pains in my leg (where the blood clot was, called DVT), but my doctor did not think I was at risk for blood clots. However, I still had pains a couple weeks later and I had started getting short of breath every time I went to the gym. After a negative COVID-19 test, I should have gone back and asked for testing to be done but I brushed it off as me being out of shape. That was a very expensive mistake, in terms of money, time, and physical pain.

EDUCATE YOURSELF

Recognize the signs of a heart attack or any other medical trauma that requires emergency services. My husband was able to call 911 for me when I was suffocating, but he had no idea what to do otherwise. He felt useless. Learning CPR and first aid could save someone's life.

Remember, the smallest effort is where it starts. Put your heart into what you do but don't forget to include staying healthy as a part of that! [DVI](#)

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SOCIAL MEDIA SLUMMING

BY AIMEE MATTHIES



Hi. My name is Aimee, and I love all things water and wastewater and specifically WEAU. (Water Lovers Anonymous group responds: “Hi, Aimee.”)

If you’re here reading this, you have at least some inclinations for the same, I’m sure. This past spring at the annual WEAU conference in St. George, my amazing friend and one of my mentors, Sherry Sheffield, who is currently serving as the WEAU Vice President, approached me with a request. She wanted me to take on the role of the social media personality for WEAU so the association could reach more people. I was so excited that I immediately said yes without knowing what I was getting myself into or what needed to be done.

Basically, I’ve been working to reinvent how WEAU does social media. There was not a lot of presence from our organization on social media sites when I started, and any that were extant had been abandoned for quite some time. I decided to start everything up brand new. Facebook, Twitter, Instagram, TikTok, and LinkedIn. It was intimidating! But I feel like I’ve been getting a little bit of the hang of things. I love being able to post about water topics in a place where people who are in the water and wastewater industry can see them. I have also been working to spotlight miscellaneous people and facilities for amazing things they do. Some of these are individuals or plants that I know personally, and others are those that have been suggested to me by others.

The greatest part about all of it is knowing that there are people who see what gets posted. Sometimes an email from WEAU will get buried in the backlog of important things and some may not pay attention to the information that they contain every time. (“Guilty as charged, your honor.”) They might miss out on opportunities that are being offered. I get to give people the chance for a second glance as they scroll through their feed to notice that the Young Professionals are holding an event or that a class is being held that they might be interested in. It also pleases me to give credit where credit is due to incredible people who work hard in our beautiful state and organization.

Is this a shameless plug to ask everyone to follow our socials? Yes. But mostly I just want everyone to be able to see how absolutely incredible this organization is. WEAU is a blast to be a part of and I am so happy to be working in a wastewater plant in the state of Utah.

To parody LaVar Burton from Reading Rainbow: So, take a look, we’re on Facebook! (And Twitter, Instagram, and LinkedIn) as *WEAU Water Environment Association of Utah* on each site. You’ll know you are in the right place when you see recent posts and our lovely President, Sarah Leavitt, as the picture. See you all the next time I’m slumming it online and sharing water stories! [D!](#)

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Montville Facility Embraces Septage



Two things are perhaps certain about septage; it is highly variable – and by its very nature (spewing odorous compounds and elements that can cause disease), it is “objectionable.”

Or is it?

Endless amounts of grease, grit, hair, and debris – not surprisingly very unpleasant in appearance and odor (hydrogen sulfide, mercaptans, and other organic sulfur compounds), viruses, bacteria, and parasites – mean it’s not exactly charm-personified. But according to the Environmental Protection Agency (EPA), septic tanks are used for more than 20% of homes in the US. Some 6,500

businesses employ over 30,000 people in an industry worth \$5 billion. Is that still “objectionable?”

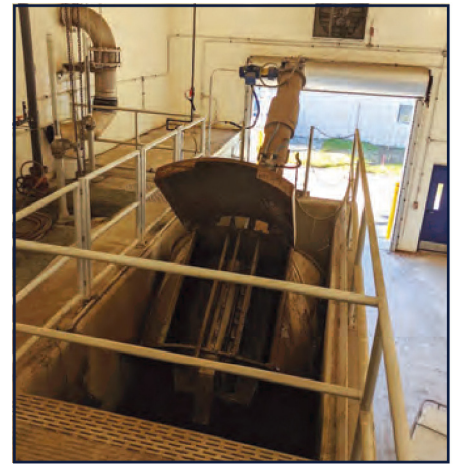
The word ‘debris’ seems to have a large degree of interpretation in the septage industry. For many it simply means small, scattered pieces of trash or loose, natural material. For one septage-receiving wastewater treatment facility in Connecticut just recently, ‘debris’ meant discovering a large fencepost doing its level best to wreck and block the screen and components of its septage acceptance plant.

Raising more than an eyebrow at the uninvited fencepost were the team at Montville’s Water Pollution Control Wastewater Treatment Facility (WPCWWTF),

whose key responsibility is to protect the ecosystem of the Thames River.

“Can’t say that we’ve seen a fencepost here before,” said Scott Farrington, Operator II at Montville WPCWWTF, “but in the large volumes of septage we receive (approximately 150,000 gallons per week), we see plenty of ‘interesting’ objects – and on top of everything else we take in, our treatment equipment is constantly put to the test.”

In addition to all the typical challenges of today’s wastewater treatment facility – including the curse of those supposedly ‘flushable’ wet wipes, which are arguably more ‘objectionable’ than septage(!), Montville’s two-million-gallon capacity also



includes industrial-strength wastewater from a major packaging factory via a dedicated 2.4-mile pipeline.

According to the Rockland, Massachusetts-based Maher Corporation (established 1970), the leading source of water and wastewater treatment products in New England, very few manufacturers have had long-term success in selling in their equipment to meet those highly variable challenges presented by septage.

‘Seriously rugged, for the long-term’

“To be frank, much as we’ll always be there for our customers, we don’t want to be called back to problems every week (!), so selling, reliable long-lasting equipment for such a tough application as septage is a must,” said Fred Croy from Maher Corporation, the company that has provided a wide range of blowers, pumps, pipes, and other equipment for Montville.

He added: “We are very conscious that the septage going into the town’s facility has contained no shortage of crushed granite. This shouldn’t get sucked up by the hoses when hauliers make their collections, but inevitably, it happens, making it all-the-more reason for us to recommend equipment that is seriously rugged, for the long-term.”

Almost 18 years ago, Montville (population 20,000) invested (via Maher Corporation) in a Septage Acceptance Plant (SAP) from Lakeside Equipment Corporation. As the SAP name suggests, it is designed to remove debris and inorganic solids from septage tanks (also for grease traps, sludge, leachate, and industrial waste).

Not surprisingly, septage can have a significant impact on plant operations or performance if receiving facilities are not properly designed and managed. It increases plant operation and maintenance costs, with the handling and disposal cost of residuals (sludge, grit, screenings) often showing the largest increase. No such problems at Montville, however, where generating revenue from highly variable septage is a skilled, delicate, balancing act, that Scott Farrington and the team led by Superintendent Derek Albertson have become masters at. Keeping the Montville process stable continues to set an excellent example, with state permits met very comfortably for parameters such as total suspended solids (TSS) and biological oxygen demand (BOD5), as well as an extremely effective removal of phosphorus. Up to 75% of the treated

effluent is recycled for use in a nearby paperboard manufacturer. The remaining clean effluent is discharged to Horton Cove (Thames River).

Processes aside, septage addition to a wastewater treatment plant can also increase administrative tasks associated with record-keeping and billing of hauliers and the need to streamline the septage receiving operation, but 10 years ago during a refurbishment Montville (again via Maher Corporation) introduced a Lakeside Raptor Acceptance Control System (RACS), which was integrated with the SAP to allow authorized hauliers to unload septage. This security access station, which includes a data management and accounting system, and provides administration capabilities to track and invoice customers.

‘The system is incredibly robust’

“We offer very reasonable rates for septage hauliers, so have taken many more on board in recent years, which is fine so long as we continue to manage this proportionally,” Montville’s Derek Albertson, commented. “We have a constant flow of trucks, but some hauliers think they can bring almost anything in. This is where Lakeside’s RACS (control system) is so effective and flexible. There is a learning curve and skill set required as operators, but the system is incredibly robust; it doesn’t need very much maintenance at all. The drivers have to sign in with a code, which provides traceability and frees us up. It also gives hauliers the flexibility to call when they need to, without any unnecessary waiting.”

The upgrade at Montville a decade ago also included the addition of a Lakeside Raptor Fine Screen in the influent channel. Unlike the existing, conventional bar screen, this new influent screen benefits from a similar type of cylindrical screenings basket as the SAP, with angled installation and screen bars of varied heights to increase removal efficiency and minimize head-loss. The screen’s rotating rake teeth fully penetrate the cylindrical screen bars. This prevents plugging and blinding from grease and small debris – thus importantly allowing faster unloading times to generate more revenue. Captured screenings are compacted, dewatered, and washed free of most organic materials to approximately 40% solids. Volume is reduced by 50% and weight by 67%, reducing the cost of disposal.

“The Lakeside Screen (with quarter-inch apertures) has been extremely effective in removing rags and plastics from our process,” added Derek Albertson.

‘One technology for two applications’

“We never know quite what we’re going to get with septage. Over the years, the Lakeside kit has really taken some hits. People have tried their best to kill this equipment, including with that recent fencepost, but despite being our first line of defence at the intake, the Lakeside SAP and its Raptor Screen have been very dependable, with just routine maintenance required,” Derek said. “To say that the unit is robust is a big understatement. The equipment also doesn’t take up too much space and is very easy to get at and work on. Overall, the SAP and its screen certainly shields our secondary equipment.”

He continued: “The consistency in configuration, which effectively has given us one technology for two applications, has also been a big benefit to us. What we have now is so much better for the facility, with an automatic screen compared to the old bar rack that had to be cleaned manually. The Lakeside SAP proved so solid that it gave us every confidence to invest in one of their screens.” **DT**





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WEAU Operator and Professional Scholarship Application

The WEAU Scholarship Award is available to individuals serving in Utah’s Wastewater field. All applications are reviewed by a WEAU Board appointed panel. The scholarship funds are intended to be used towards the applicant’s education, trade school classes, education books or student loans. WEAU reserves the right to follow up with the applicant to find out how the funds helped further advance their career goals. The applicant may be requested to write a brief summary of their experience in the *Digested News*. Applicants may only receive the scholarship once.

Application Requirements and Criteria:

1. Member of Water Environment Association of Utah (WEAU)
2. Currently working/serving in Utah’s Wastewater field
3. Complete and submit the application to weauscholarship@gmail.com

Application Deadline:

October 31, 2022

Award Announcement:

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Questions contact:

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Application Date _____

First Name _____

Last Name _____

Phone Number _____

Email _____

WEAU Membership Years _____

WEAU Membership Number _____

WEAU Involvement (such as what committees have you served on or events have you helped with)

Education/Certification

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Responsibilities

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Responsibilities

Desired use of scholarship fund _____

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Briefly describe how this scholarship would benefit you at your current job

How will you continue to be involved in WEAU?

WEAU Operator and Professional Scholarship Application

Comments/Work Experiences

Who has been your biggest mentor in the wastewater field?

Provide a recommendation from a member of the wastewater field. To be completed by the person who is recommending you for the scholarship.

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Manager Name _____

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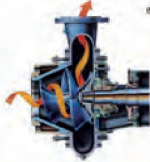
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