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The Official Publication of the Water Environment Association of Utah

# DIGESTED news

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**INSIDE:**

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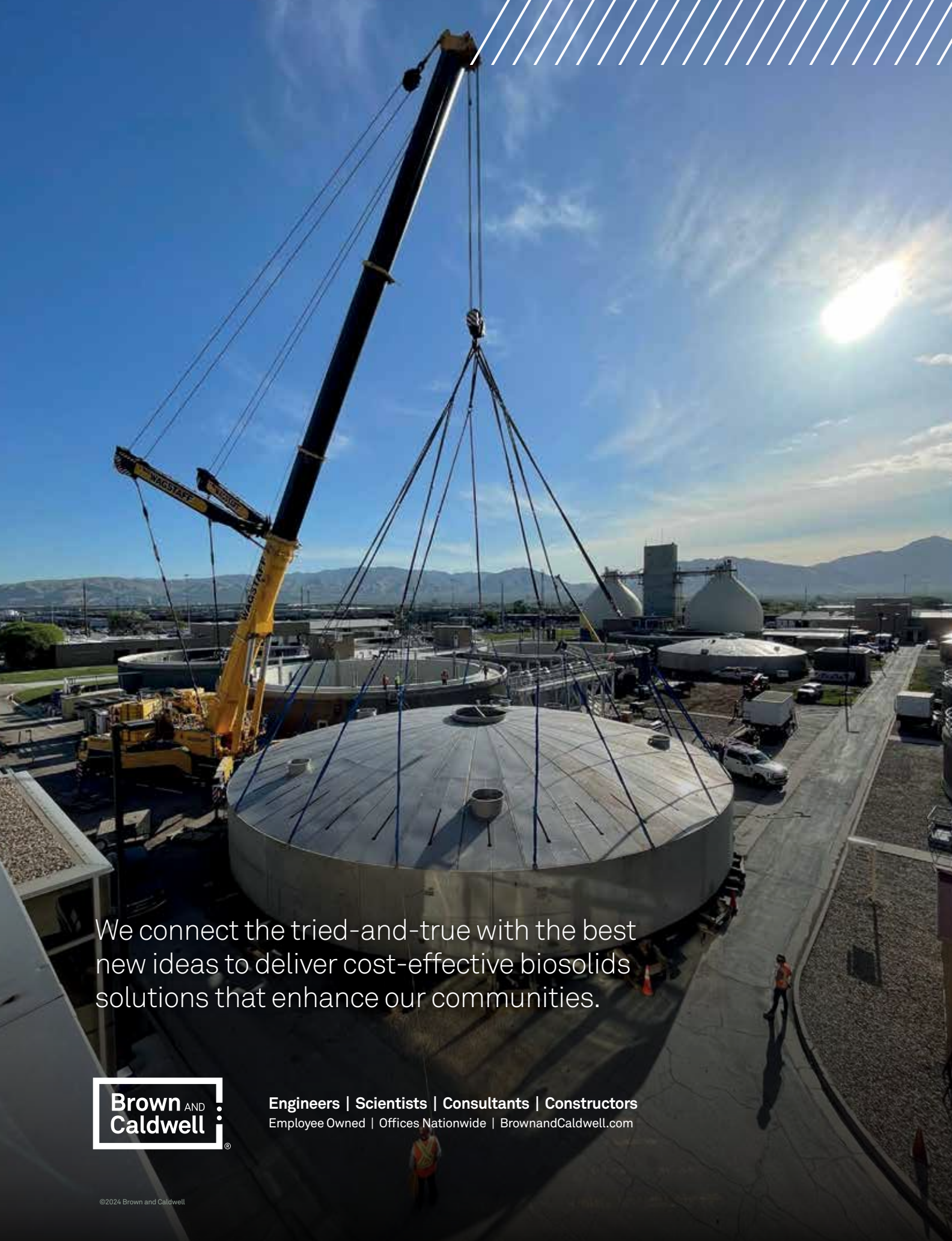
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Chad Burrell

# The History of Necessity

**M**y love and fascination for history, linked with how much I enjoy my career in wastewater, make me an interesting person to vacation with! I can't tell you how many times my kids have complained from the back seat of the car as I have swerved off the highway in the middle of road tripping because I happen to see some anaerobic digesters looming in the distance. While touring an 1800s plantation in Louisiana, or a Utah Pioneer home, I am one of those people that looks for the outhouse and gets great satisfaction if the door is open so I can inspect things inside. There is probably counseling out there for this kind of behavior, but my wife has not signed me up yet!

In all seriousness, I am always impressed when past civilizations have recognized the negative impacts that raw sewage can have on their health and have done something about it – even if they didn't understand completely why they needed to do it. I am sure none of our ancient forefathers understood viruses, bacteria, cell structure, or microbiology like we do today. But some of them made the simple connection: human waste makes me sick.



In 2020, my wife and I traveled to a country in South America and while driving the countryside, I spied what was most definitely a wastewater treatment plant. Our kids were not with us and therefore did not have to endure my U-turn, but my wife did roll her eyes as I swung into the facility, talked to some operators, walked around and took some pictures. I had to laugh at first at their chlorine disinfection system (which consisted of a 50-gallon drum of sodium hypochlorite, sitting on a grate over their effluent channel with a bottom valve cracked open so it would continually drip into the effluent flow). Then I had to put a serious smile on my face because even though it might be considered pretty low-tech, they got it, human waste made them sick, and this practice, though underdeveloped, did the trick and solved the problem.

As Aesop's proverb says, "Necessity is the mother of invention." Look around our industry, there is a lot of necessity and a lot of inventing going on and I want to thank everyone for taking part in it.

On a separate note, I want to thank our Midyear Conference Committee for putting together a great conference. It was a great opportunity to mingle and share ideas. Thanks for everyone's attendance. [DN](#)

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# Wisdom for the Ages

Bryan Mansell

So, this is my last Editor's message before I move onto other WEAU assignments. Please don't cry. Here's a tissue. Thankfully, Wyatt Andersen will be taking the reins, and you'll likely see a marked improvement in *Digested News*. As a final message, rather than fabricate new nonsense, I decided to simply regurgitate some of the wisdom from my past messages in a quick recap of everything you've missed by not reading my articles these past 5+ years.

Sage Wisdom:

1. Sophomoric thinking generates excellent flat-earth-like conspiracy content, if you're into that kind of thing.
2. New and exciting technologies, pets, farm animals, and other emotional purchases always have some strings attached. Gloves recommended.
3. Don't be fooled. The default settings that have been on your phone for years are doing more for or against you than whoever you voted for.
4. Smokey the Bear was not an anti-masker.
5. If you're experiencing male pattern baldness, try all new Lorem Ipsum Dolor!
6. Costanza wallet can be cured. There's hope for you.
7. Teens and acronyms go together like TSS and SRT.
8. Graphic content can really serve its intended purpose.
9. Someone really does need to conduct a scientific study of the woodchuck's wood chucking competence.
10. Look on the bright side. Every worldwide pandemic brings with it a new set of colloquialisms and thereby an expansion of common vocabulary.
11. Hand your new coworker a Rubik's Cube and ask them to teach you how to solve it.
12. The 'man cold' can outwit even the best immune systems.
13. There's no wrong way to poop in the woods, but there are effective ways to avoid fatigue.
14. It's perfectly acceptable to have a heart-to-heart conversation with that paper mâché man sitting in front of you.
15. A missing key to energy sustainability is leveraging the power of America's original gross domestic product.
16. Even the best designed mattresses are subject to the risk of user error.
17. If you're hiking the alps in a rainstorm, don't use an umbrella.
18. Family Christmas gatherings are increasingly shifting towards the appearance of Festivus.
19. Everyone needs a space bucket list – the opportunity may soon be knocking.
20. (From Jessica Cooper's article:) When bathing a 90 lb mammal, remember to lift with your knees. Also, don't try this alone.
21. Don't submerge your political views and discussions under the influents. Vactor trucks needed.

There you have it. All the wisdom you'll need for the next 15 minutes. In all seriousness though, I love being part of WEAU and take great pride in what we accomplish together. Editing *Digested News* has been very rewarding and I look forward to watching it progress to the next level and reading the articles for years to come. [Dn](#)

## 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](mailto:digestednews@weau.org)) the correct page number to **win an Amazon Gift Card – now \$50!**

Emails should include:

- Subject: I found the golden shovel
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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. [Dn](#)



**CONGRATS TO:**  
**MARIO CAMPOS OF ASH CREEK**  
**SPECIAL SERVICE DISTRICT**  
**FOR FINDING THE GOLDEN**  
**SHOVEL ON PAGE 18 OF**  
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**ENJOY YOUR GIFT CARD!**

**Have feedback or suggestions?** We'd love to hear from you about what parts of *Digested News* you find helpful, or about what you'd like to see. Email us at [digestednews@weau.org](mailto:digestednews@weau.org).

# Maintenance Quiz

1. **A 480-volt system has a resistance of 20 ohms. What is the power consumed in watts?**
  - A. 20 watts
  - B. 24 watts
  - C. 9,600 watts
  - D. 11,520 watts
2. **Each pneumatic tool should be equipped with \_\_\_\_\_.**
  - A. A pneumatic handle
  - B. An air line lubricator
  - C. A chuck key
  - D. Cushioned handles
3. **The reducer located on the suction side of a horizontally mounted centrifugal pump should be \_\_\_\_\_.**
  - A. Flanged
  - B. Eccentric
  - C. Concentric
  - D. A minimum double reduction
4. **The initial step in preparation for installation of machinery is to \_\_\_\_\_.**
  - A. Check the balance of the equipment
  - B. Set the foundation
  - C. Locate the baselines
  - D. Align the equipment
5. **The most widely used of all pipe valves, in the smaller sizes, is the \_\_\_\_\_.**
  - A. Gate valve
  - B. Butterfly valve
  - C. Globe valve
  - D. Cone valve
6. **Alternating current (AC) is described as \_\_\_\_\_.**
  - A. The movement of electrons commonly referred to as the flow of electricity.
  - B. The electromotive force in an electrical system.
  - C. The quantity and rate of flow in an electrical system.
  - D. Current flow that is continuously reversing in direction.
7. **You have been informed that your centrifugal pump was discharging properly and suddenly stopped discharging. Which of the following could be the problem?**
  - A. Misalignment
  - B. Stuffing box too tight
  - C. Air or vapor in liquid
  - D. Pump not primed
8. **The pitch of a screw thread is \_\_\_\_\_.**
  - A. The angle included between the sides of the thread, measured in the axial plane.
  - B. The distance from a point on the screw thread to a corresponding point on the next thread.
  - C. The angle included between the side of a thread and the centerline, measured in the axial plane.
  - D. The distance a screw advances axially in one turn.
9. **What is the purpose of the cage in an antifriction bearing?**
  - A. Keep the grease next to the rolling elements.
  - B. Hold the rolling elements in the races during assembly.
  - C. Hold the rolling elements in the races during operation.
  - D. Properly space the rolling elements and guide them through the load zone.
10. **A parking lot has a bank of ten 400-watt lights that operate for 10 hours a day. It also has a 150-watt sign that is always on. If the power cost \$0.095 per kilowatt-hour (kwh), what is the cost to operate this lot for 30 days?**
  - A. \$21.66
  - B. \$114.00
  - C. \$124.26
  - D. \$216.60
11. **What is the most important feature for adequate equipment grounding?**
  - A. Insulation
  - B. Low current
  - C. Low-impedance path
  - D. Over-current devices
12. **The two main classifications of air compressor are \_\_\_\_\_.**
  - A. Positive-displacement and dynamic
  - B. Air-cooled and water-cooled
  - C. Reciprocating and rotary
  - D. Vane and piston
13. **Three major functions of a flexible coupling are to \_\_\_\_\_.**
  - A. Transfer rotary motion, compensate for slight misalignment, and damping vibration.
  - B. Transfer rotary motion, compensate for slight misalignment, and minimize or eliminate the conduction of electricity.
  - C. Transfer rotary motion, compensate for slight misalignment, and allow for axial movement of the shafts.
  - D. Transfer rotary motion, damping vibration, and allow for axial movement of the shafts.
14. **Which kinds of bearings are used when a motor is to be mounted horizontally?**
  - A. Radial
  - B. Thrust
  - C. Angular
  - D. Antifriction
15. **Duel-element cartridge fuses are designed mainly for?**
  - A. High-voltage installations
  - B. Home-light circuits
  - C. Motor-circuit protection
  - D. Supplementary protection 

## Answers

1-D, 2-B, 3-B, 4-C, 5-C, 6-D, 7-C, 8-B, 9-B, 10-C, 11-C, 12-A, 13-C, 14-A, 15-C.

# Operations Quiz

Submitted by Taylor Byrum

- The usual efficiency of a raw wastewater centrifugal pump is \_\_\_\_.**
  - 90% to 100%
  - 80% to 90%
  - 70% to 80%
  - 60% to 70%
- The discharge of a centrifugal pump \_\_\_\_.**
  - Decreases with the increase of head
  - Increases with the increase of head
  - Is independent of the head
  - Increases with the head increase only at the start of pumping
- A motor pulling 4 amps at 440V uses \_\_\_\_.**
  - 110 watts
  - 444 watts
  - 176 watts
  - 1760 watts
- If short-circuiting occurs in a clarifier, the operator should \_\_\_\_.**
  - Check the wiring
  - Identify the cause
  - Change fuses
  - Increase the sludge draw-off
  - Restart the pump
- You have an excessive DO drop across a primary clarifier. What is the most probable cause?**
  - Too heavy wastewater flow
  - Infrequent sludge pumping
  - Excessive BOD removal
  - Poor adjustment on the weirs
- The detention time of wastewater in sedimentation basins is dependent on the size of the basin and the \_\_\_\_.**
  - Rate of flow of the wastewater into it
  - Length of the discharge pipe
  - Amount of bacteria in the wastewater
  - BOD content
  - Amount of hydrogen sulfide in the wastewater
- A trickling filter or activated sludge process causes nitrification, which is the \_\_\_\_.**
  - Conversion of nitrogen to nitrate
  - Conversion of nitrogen to ammonia
  - Conversion of nitrate to nitrogen
  - Conversion of ammonia to nitrate and nitrite nitrogen
- How would increasing recirculation rates affect the DO content of the trickling filter effluent?**
  - It would decrease it
  - It would increase it
  - It would remain the same
  - It would be supersaturated
- Unloading of the trickling filter means \_\_\_\_.**
  - That the medium is slowly being disintegrated and washed off in the final tank
  - That solid matter has sloughed off the filter material
  - That the filter is operating poorly and should be checked
  - All of the above
  - None of the above
- Psychoda are \_\_\_\_.**
  - Organisms that cause sludge bulking
  - Small flies often found on trickling filters
  - A type of small red worm frequently found in deposits of sludge
  - Nitrifying bacteria found in sand filters
- Which of the following is not a modified method of the activated sludge process?**
  - Step aeration
  - Complete mixing
  - Kraus process
  - Contact stabilization
  - Wet oxidation process
- The Kraus process is used mainly to supply \_\_\_\_ to the activated sludge system.**
  - Digested sludge
  - Oxygen
  - Carbonaceous material
  - Nitrogenous material
- Air requirements in an activated sludge tank are governed by \_\_\_\_.**
  - The BOD loading and the desired efficiency in BOD removal
  - The SS concentration in the primary clarifier effluent
  - The volatile solids content of the tank
  - All of the above
- What is hypochlorite?**
  - A chlorinated and decomposed algal particle
  - A chlorine compound that is used for disinfection
  - A neutralized and ineffective chlorine compound
  - A raw material used in the production of chlorine gas
- The high level of nitrates in treated domestic wastewater shows \_\_\_\_.**
  - The presence of toxic industrial wastes
  - A good degree of treatment
  - A poor degree of treatment
  - That there is no need for chlorination **dm**

## Answers

1-B, 2-A, 3-D, 4-B, 5-B, 6-A, 7-D, 8-B, 9-B, 10-B, 11-E, 12-D, 13-D, 14-B, 15-B.

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# Collections Quiz

Submitted by Daniel M. Olsen

1. **51 mg/l of root control must be added to a 54-inch sewer that is 2,127 feet long. If the root control chemical is in a solution that consists of only 41% of the chemical, how many lbs of the solution must be added to the sewer?**
  - A. 262.37 lbs
  - B. 44.10 lbs
  - C. 292.54 lbs
  - D. 6,351.06 lbs
2. **What is a mechanical means to remove material from a sewer?**
  - A. Herbicides
  - B. Cutting
  - C. Pumping
  - D. Sweeping
3. **The purpose of a lift station sign-in log is to \_\_\_\_\_.**
  - A. Budget lift station visits
  - B. Identify who makes changes in station operation
  - C. Track employee movement for disciplinary actions
  - D. All of the above
4. **An automatic chemical feeder treats 17 MGD at a concentration of 54 mg/l. How many lbs/day of chemical is required?**
  - A. 1,024 lbs/day
  - B. 6,867 lbs/day
  - C. 7,656 lbs/day
  - D. 823 lbs/day
5. **Which tools are used with a power rodder?**
  - A. Finger grips
  - B. Pruning shears
  - C. Spring
  - D. Videotape camera
6. **The minimum scouring velocity normally used for sanitary collection lines is \_\_\_\_\_.**
  - A. 1.0 fps
  - B. 2.0 fps
  - C. 5.0 fps
  - D. 10.0 fps
7. **Calculate the water horsepower if the pump it operates provides 1,475 GPM against 125 feet total dynamic head (TDH)?**
  - A. 63 HP
  - B. 88 HP
  - C. 12 HP
  - D. 47 HP
8. **If the pump in the previous problem is 72% efficient, then what is the brake HP?**
  - A. 64.7 HP
  - B. 122.6 HP
  - C. 16.4 HP
  - D. 53.6 HP
9. **What equipment is effective in removing an emergency stoppage?**
  - A. Strip chart recorder
  - B. Ultrasonic meter
  - C. Front-end loader
  - D. Hand rodder
10. **If a pump outputs 450 GPM against a total dynamic head of 650 feet, and the pump is 81% efficient, what is the brake HP?**
  - A. 59.8 HP
  - B. 91.2 HP
  - C. 53.7 HP
  - D. 62.9 HP
11. **The formula for calculating the volume of a cylinder is \_\_\_\_\_.**
  - A.  $V = L \times W \times H$
  - B.  $V = \text{Distance}/\text{time}$
  - C.  $V = D^2 \times .785 \times L$
  - D.  $V = D^2 \times 746 \times L$
12. **The power factor of a motor is 0.79 and the pump has an efficiency of 79%. If the motor consumes 7,900 watts, what is the water horsepower?**
  - A. 10.6 HP
  - B. 17.0 HP
  - C. 8.4 HP
  - D. 6.6 HP 



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13. Employers must provide employees with information about possible health effects from contact with hazardous materials. This is called “right-to-know” legislation. Which document provides right-to-know?  
 A. Safety Data Sheet  
 B. NPDES permit  
 C. Sewer ordinance  
 D. Clean Water Act
14. The interior of 1,275 ft of 60-inch pipe is uniformly coated with 2.75 inches of grease. How many gallons will this pipe hold when filled with water?  
 A. 154,423 gal  
 B. 33,810,668 gal  
 C. 172,178 gal  
 D. 26,541,375 gal
15. What will happen if the discharge valve on a centrifugal pump is partially closed?  
 A. Amperage will increase, discharge head will increase  
 B. Amperage will decrease, discharge head will increase  
 C. Amperage will decrease, discharge head will remain constant  
 D. Amperage will decrease, discharge head will decrease
16. One cubic foot per second flow is equal to \_\_\_\_\_ gallons per hour.  
 A. 2,794  
 B. 3,500  
 C. 6,000  
 D. 26,928
17. Colored dye is dumped into a manhole. The dye first appears 3 minutes, 17 seconds later in a manhole 1,850 feet downstream and disappears 21 minutes, 49 seconds after the dye was first dumped into the manhole. What is the velocity of the flow in the sewer?  
 A. 1.41 fps  
 B. 2.46 fps  
 C. 9.39 fps  
 D. 0.81 fps
18. “Schedule 40” refers to pipe \_\_\_\_\_.  
 A. flow capacity  
 B. friction loss  
 C. tubing strength  
 D. wall thickness
19. A wastewater treatment plant receives the information below. If the plant receives 7.3 MGD, what percentage of the total flow is contributed by sewer “B”?  
*Pump Station = 3,250 GPM*  
*Sewer “A” = 12,500 People @ 95 GPCD*  
*I&I = 24,000 gal/day*  
*Ind. Waste = 67,000 gal/day*  
*Sewer “B” = ?*  
 A. 77.5%  
 B. 22.5%  
 C. 81.6%  
 D. 18.4%
20. Employee hazards in collection system operations include \_\_\_\_\_.  
 A. Noxious or toxic gases or vapor  
 B. Oxygen deficiency  
 C. Physical injuries  
 D. All of the above
21. A wet well is 9 feet deep by 21 feet in diameter. When the pump is not running, the water rises 33.0 inches in 2 minutes, 52 seconds. If the level falls 5.2 inches in 14.0 minutes while the pump is running,  
 A. 2,204 gpm  
 B. 2,564 gpm  
 C. 2,980 gpm  
 D. 11,740 gpm
22. If a sewer must have a flow rate of 27 MGD with a velocity between 1.50 fps and 2.75 fps, what must the minimum size be?  
 A. 53 in  
 B. 72 in  
 C. 71 in  
 D. 52 in **DA**

**Answers**

1-A, 2-B, 3-B, 4-C, 5-C, 6-B, 7-D, 8-A, 9-D, 10-B, 11-C, 12-D, 13-A, 14-A, 15-B, 16-D, 17-B, 18-D, 19-D, 20-D, 21-B, 22-A.

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# WEFTEC 2024 Operations Challenge

By James Magill

**A**t this year's WEFTEC, Utah had an impressive presence from our teams and the dedicated volunteers who judged the Operations Challenge events. I'd like to extend a special acknowledgment to Nate Cloward, who judged collections; Jeremy Deppe, Austin Peterson, and Chris Reilley, who judged maintenance; and Taylor Byrum, Tyler Barfuss, Marlo Davis, Gordon Call, and Heath Ruesch, who judged safety.

A big congratulations to both *Wasted Gas* and *Wasatch All-Stars* for their remarkable performance this year! Central Valley's *Wasted Gas* placed 7th overall in Division 2, earning 6th in Process, 4th in Safety, and 7th in Collections. *Wasatch All-Stars* placed 6th overall in Division 2, with an impressive 2nd in Safety and 3rd in Maintenance. Well done, gentlemen!

The Operations Challenge saw the largest turnout to date, with 59 teams, including eight international competitors. Division 1 featured 11 teams, Division 2 had 19, and Division 3 had 27 teams, creating an exciting and intense day for both competitors and judges. Day one of the competition kicked off with a Process Test for all teams,

followed by a lab event. Day two included the faster, more physical events: Safety, Maintenance, and Collections. Although the Process Test may seem less intense, competitors need a deep understanding of formulas, problem-solving, working through scenarios, and running Hydro Mantis which is a process simulator. This requires a significant amount of preparation.

Watching the competition unfold and being part of the action is truly an exciting experience. For anyone who hasn't yet had the opportunity to attend or participate, I highly encourage you to join, whether as a competitor or a spectator. The camaraderie formed among participants and the friendships built with others in the field last well beyond the event.

With nationals behind us, we now look forward to our local Ops Challenge in St. George this coming April, with a kickoff meeting scheduled for December. Teams will begin practicing in mid-January, and we're hopeful to see even more teams join this year. We hope to see everyone soon! [DH](#)

## Operator Spotlight: Sean Fischer

By James Magill

**T**his quarter I am pleased to introduce Sean Fischer. Sean has been an Industrial Mechanic at Central Valley Water Reclamation Facility for eight years. He is a Grade 4 Mechanic and holds a Grade 2 Wastewater Certification.

Sean has been married for 21 years, and has two daughters and two grandchildren. He and his family live in the Riverton area. An interesting fact about Sean's family is that his youngest daughter is three days older than his first granddaughter. Sean has played a lot of baseball and later transitioned to softball, playing both slow-pitch and men's fastpitch. His hobbies include camping, golfing, and spending quality time with his family.

He joined Central Valley Water after working for H&H Boiler Co. for 18 years, where he gained significant experience working on various types of boilers, including new installations and repairs. His previous work often involved retubing boilers at numerous sewer plants in the area. A friend's recommendation led him to Central Valley Water, where he began working and was introduced to the wastewater sector.

Sean is a hard worker who tackles challenges head-on and sees them through to completion. Having gained experience in various areas of the plant, he is always ready to lend a hand whenever someone needs it. He has been the lead on several projects and is constantly looking for the next opportunity. No matter the task, he somehow always ends up with the dirtiest uniform on the crew. Beyond his hard work, Sean is also known for his great sense of humor and enjoys working with the crew.

Sean has served on the awards committee three times, where he enjoyed networking with other plants and meeting new people. He also hopes to participate in the Ops Challenge in the future. [DH](#)





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# Second Annual WEAU YP Summit

**T**he WEAU Young Professionals (YP) Committee hosted the second annual WEAU YP Summit on Tuesday, November 5 at Jordan Basin Improvement District in Bluffdale, UT. This year's summit theme was "The Future of Water." The goal of hosting the annual YP Summit is to bring together a variety of professionals, who are early in their water and wastewater careers. The summit provided opportunities to network with peers from across the state of Utah, learn about current and upcoming challenges in the industry, discuss and develop a vision of the future of WEAU, and dive deeper into strategies for solving global water issues.

The summit kicked off with an optional plant tour of Jordan Basin WRF, providing YPs with an opportunity to see a treatment facility with state-of-the-art membrane technology. Following the tour, YPs networked over lunch and participated in an icebreaker activity, which had attendees work in small groups to draw pictures representing similarities they found amongst each other. Within minutes, everyone was sharing laughs, and it felt as though everyone in the room already knew one another.

## There were four technical modules throughout the summit:

### Module I

Modern Water Challenges featured a technical presentation from Brad Jeppson (Stantec) on Washington County's water supply challenges and solutions. Will Peterson (AECOM) also shared insights from his experience creating sustainable solutions and developing Envision programs.

### Module II

How to Talk to Anyone had Sarah Ward (Utah DEQ) present on the importance of creating an effective elevator pitch for strong first impressions. Her presentation was followed by a group activity on how to ask engaging questions and YPs saw these skills in action through a skit by the YP summit committee demonstrating "good" vs. "bad" networking.

### Module III

Strategies for Industry Success introduced a panel of industry experts who shared their perspectives on strategies for solving



water challenges. The panel included Ragan Bryce from PCL Construction, James Goldhardt from Coombs Hopkins, Rich Mickelson from Timpanogos Special Services District, Navneet Prasad from Central Valley WRF, and Sherry Sheffield from South Valley WRF. Each panelist brought a unique perspective in answering questions from YPs.

### Module IV

Furthering the WEF Mission wrapped up the summit with a focus on the WEF Strategic

Plan and how students and YPs within WEAU can further the WEF goals, embrace WEF's core values, and help develop a diverse workforce. ValaRae Partee, a design engineer and project manager with Brown and Caldwell, as well as the WEF DE&I Committee Chair, joined virtually from Georgia to present on what other WEF Member Associations (MAs) have accomplished in the DE&I realm. Inspired by her presentation, WEAU YPs split up into small groups to brainstorm actionable steps that WEAU can take to support WEF's DE&I initiatives.

## Young Professionals

The summit also featured free professional headshots, WEAU swag giveaways, and an evening bowling social at Pins & Ales. Thank you to the summit planning committee, speakers, volunteers, and WEAU Board for their help in executing the YP Summit. The 2024 WEAU YP Summit was a tremendous success and we encourage all YPs and students involved in WEAU and the water industry to attend the event next year. [D&A](#)



# YPs Support Global Water Stewardship at the Mid-Year Conference

At this year's Mid-Year Conference, the Young Professionals (YPs) raised funds for the non-profit organization, Global Water Stewardship (GWS). WEAU's Public Outreach Director, Sarah Guzman, serves as the co-chair for GWS, which focuses on providing sanitation projects, public education, and outreach initiatives in Costa Rica. In October, the YPs collected donations and coordinated with sponsors to create twelve themed gift baskets, which were auctioned off during the Mid-Year Conference. With record attendance at the mid-year conference, all of the baskets were sold, raising \$2,285 for GWS! Thank you to everyone who participated in the silent auction and bid on the baskets.

As part of the GWS program, Sarah's team works with a new community in Costa Rica each year, building a biogarden at a local school, implementing a design for a Costa Rican system to treat its own graywater, and providing educational activities for children in the community. GWS also collaborates with national and local authorities to promote and support the development of wastewater

infrastructure. Most of Costa Rica does not have centralized wastewater systems; approximately 80% of the country relies solely on septic tanks. To help address this, GWS organizes a student design competition aimed at creating blueprints for a centralized wastewater treatment and collection systems tailored to the needs of their community.

GWS also hosts TicoSan annually, the only wastewater conference in Costa Rica. This one-day conference focuses on technical topics and case studies, fostering knowledge exchange among professionals in the country.



As a 100% non-profit organization, GWS receives no funding from Costa Rica and relies entirely on sponsors and donors. Donations can be made any time directly to GWS by scanning the QR code on the left.

To learn more about GWS, please visit [www.globalwaterstewardship.org](http://www.globalwaterstewardship.org).



If you would like to get involved with GWS, please contact Sarah Guzman directly at [guzmans@bv.com](mailto:guzmans@bv.com). [D&A](#)

“All of the baskets were sold, raising \$2,285 for GWS!”



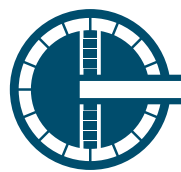
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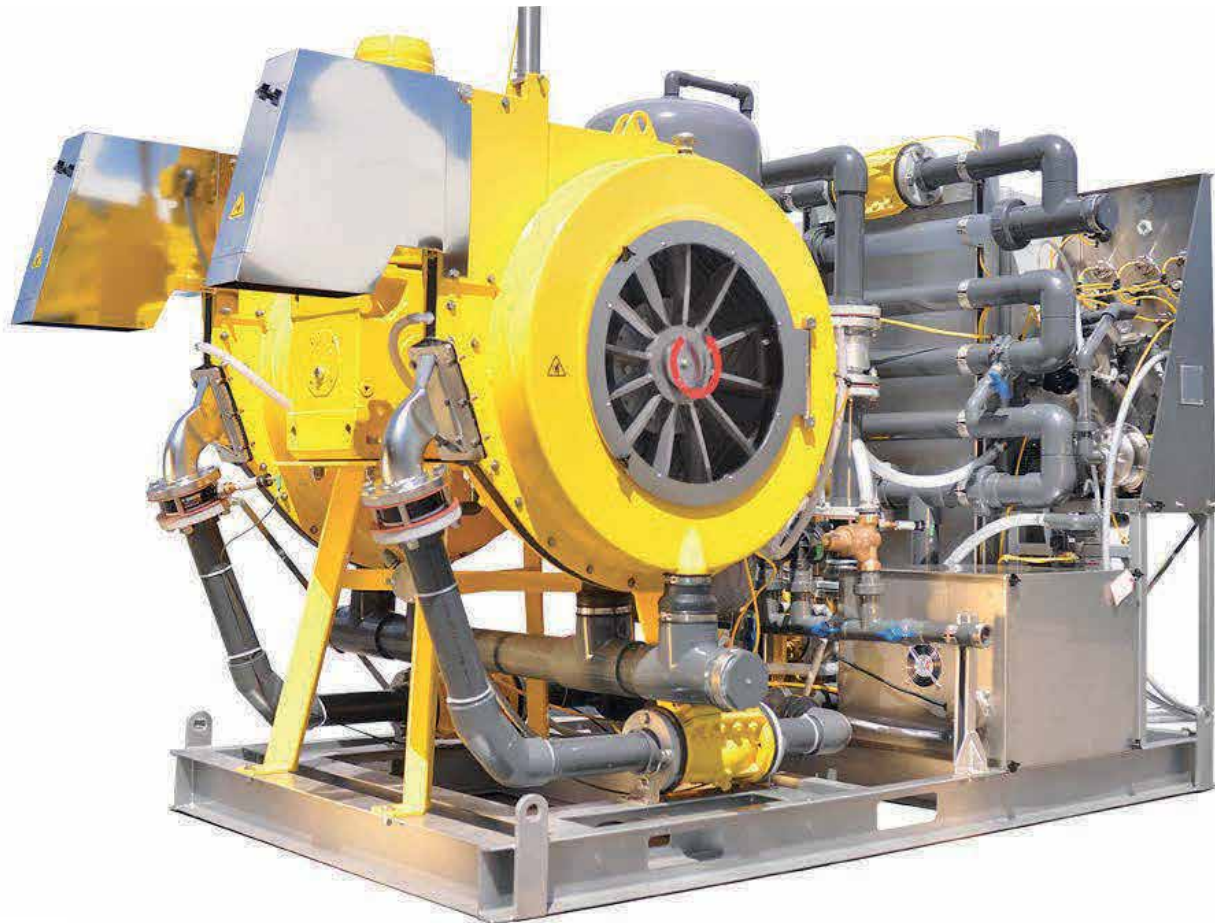
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# 2024 MID-YEAR CONFERENCE RECAP

Utah Cultural Celebration Center | November 8, 2023

**The 2024 Mid-Year Conference was a huge success.  
We want to thank all those who presented and those who attended.  
We hope to see you all again in 2025.**

## **A SPECIAL THANKS TO THE MID-YEAR CONFERENCE PLANNING COMMITTEE:**

- |                  |                   |                  |                 |
|------------------|-------------------|------------------|-----------------|
| • Chad Burrell   | • James Magill    | • Katie Reams    | • Nate Rogers   |
| • Chad Hardinger | • Jayesh Charthal | • Lauren Schmidt | • Taylor Byrum  |
| • Clay Marriott  | • Josh Donegan    | • Meagan O'Hare  | • Tiffini Adams |
| • James Dixon    |                   |                  |                 |



**Mentor Award Winners (L-R):**  
Presenter Sarah Ward (Past President), Myron Bachman, Blake Powell, Courtney Janis, Rodney Shields, and presenter Chad Burrell (President). Not pictured: David Barnes.

# 2024 MID-YEAR CONFERENCE RECAP



Nate Rogers Presents Okey Scholarship Winner Tyler Thompson.



Jayesh Charthal (left) and President Chad Burrell (right) presenting Student Presenter Award to Anna Fabiszak (center).



Tyler Thompson of BYU (left) awarded the Bob Okey Scholarship by Nate Rogers (center) and WEAU President Chad Burrell (right).



Operator and Professional Scholarship Award Winners: Rob Jaterka and Mario Campos.



Taylor Byrum (left) and James Magill (right) presenting the WEFTEC Ops Challenge Results.



Nathan Zaugg (left) and President Chad Burrell (right) presenting Stockholm Junior Water Prize to winner Krishnam Goel (center), who placed 2nd at Nationals.



L-R: Taylor Byrum, James Magill, Chad Burrell, and the Central Valley Water Reclamation Facility Wasted Gas Ops Challenge Team – Jay Nowell, Brock Thompson, Anthony Rizzuto, Jeff Bullock, and Brady Adams.






Attendees gathering for the Mid-Year Conference final raffle.



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# 2024 MID-YEAR CONFERENCE RECAP



L-R: The Wasatch All Stars Ops Challenge Team – Trevor Creamer (NDS), Cory Zeman (South Valley), Steve Lamb (SBWRD), Shawn Bosen (NDS), Jonathon Baranowski (South Valley), Mark Campbell (CWSID) – and presenters Chad Burrell, James Magill, and Taylor Byrum.



Katie Reams (L) and Lauren Schmidt (R) present YP events, which included the Mid-Year YP Summit on November 5; The Mid-Year YP Fundraiser, which was a silent auction held at the conference to support Global Water Stewardship; and the December WEAU YP Holiday Social on December 5.



Sarah Guzman (right), WEAU's Public Outreach Chair and co-chair for Global Water Stewardship (GWS), introduces the YP fundraiser for GWS, a nonprofit organization which focuses on providing sanitation projects, public education, and outreach initiatives in Costa Rica.



Sarah Ward (past president) presenting WEF Updates, including the WEF commUNITY platform – the objective of which aims to provide an easier path for engagement and a more collaborative space for members to become involved and interact.



WEAU President Chad Burrell presents update on Certification Testing, which included higher score results.



Attendees gathering for the Mid-Year Conference final raffle.



Conference attendees at the luncheon.

**THANKS TO ALL WHO ATTENDED. SEE YOU NEXT YEAR!** 

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# WEAU Annual Conference

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Photo courtesy of Craig White, SVSD

## CALL FOR ABSTRACTS

The Conference Committee is accepting abstracts for presentations at the 2025 WEAU Annual Conference. All topics related to water quality, collection, treatment, compliance, utility management, or other related topics will be considered.

Submit abstracts online at [www.weau.org](http://www.weau.org).

Abstracts will be reviewed and you will be notified if your presentation is accepted. The presentations will be made to attendees at the conference and formal paper submissions are not required.

Deadline: December 20, 2024 



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# Apply for the Annual WEAU AWARDS

## Wastewater Professionals,

We are now asking for and accepting nominations for the **Annual WEAU Awards**. Please nominate in any of the following categories: Plants, Collections Systems, Operators, Discharging or Non-Discharging Lagoons, Programs Specialists, and Supervisors.

WEAU is a member organization where members can nominate those individuals or organizations within our industry and organization that deserve recognition by the association for their efforts. Individual awards must be nominated by someone other than nominee and the individual must be a member of WEAU. If nominating an individual, please notify their supervisor and have them sign the form. Good luck!

**The deadline for nominations to be submitted to WEAU is on December 16, 2024.**  
*(There is not an online submission form available this year.)*

Fill out the form and get it back to the Awards Committee by emailing or mailing the form as follows:




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or



**Mail to:**  
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C/O Spencer Parkinson WEAU Awards Chair  
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# General Association Awards NOMINATION FORM

## Applications are due by December 16, 2024

Instructions: Place a "X" mark in the box next to the award for the nomination. Next, fill out the information for the nominee and yourself (nominator) as fully as you can, this information will be used by the selection committee to process the nomination. Please send a separate application for each nomination, OK to copy form if needed for this purpose. Next, email the application to [awardsweau@gmail.com](mailto:awardsweau@gmail.com), **WEAU Awards Committee, Attn: Spencer Parkinson.**

### Outstanding Plant/System Awards Outstanding Individuals Awards

- |   |  |   |
|---|--|---|
| <input type="checkbox"/> Treatment Plant Operator – Under 5 MGD | <input type="checkbox"/> Collections System Operator – Under 5 MGD | <input type="checkbox"/> Collections System – Under 5 MGD |
| <input type="checkbox"/> Treatment Plant Operator – Over 5 MGD  | <input type="checkbox"/> Collections System Operator – Over 5 MGD  | <input type="checkbox"/> Collections System – Over 5 MGD  |
| <input type="checkbox"/> Treatment Plant – Under 5 MGD          | <input type="checkbox"/> Laboratory                                | <input type="checkbox"/> Maintenance Specialist           |
| <input type="checkbox"/> Treatment Plant – Over 5 MGD           | <input type="checkbox"/> Laboratory Technician                     | <input type="checkbox"/> Pretreatment Specialist          |
| <input type="checkbox"/> Lagoon - Discharging                   | <input type="checkbox"/> Supervisor – Under 5 MGD                  | <input type="checkbox"/> IT Specialist                    |
| <input type="checkbox"/> Lagoon – Non Discharging               | <input type="checkbox"/> Supervisor – Over 5 MGD                   | <input type="checkbox"/> Young Professional               |

### Outstanding Program Awards

- Pretreatment Program     Safety Program     Biosolids Program

### Nominee Information

Individual, System or Program Name (As it will appear on the Award Plaque):

\_\_\_\_\_

Employed At (For Individuals Only): \_\_\_\_\_

Address: \_\_\_\_\_ City/State/Zip: \_\_\_\_\_

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

Supervisor's Name (For Individuals Only): \_\_\_\_\_ Plant / System Manager: \_\_\_\_\_

### Nominator Information

Name: \_\_\_\_\_ Address: \_\_\_\_\_

City/State/Zip: \_\_\_\_\_ Phone: \_\_\_\_\_ Email: \_\_\_\_\_

Briefly describe why you think the nominee should be considered for an award (please use a second page if necessary):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

WEAU is a member organization where members can nominate those individuals or organizations within our industry that deserve recognition by the association for their efforts. When you send in your nomination, you will be contacted to arrange a time for a visit by the awards committee. Individual awards must be nominated by someone other than nominee. If nominating an individual, please notify their supervisor. Members with significant managerial responsibilities, (i.e., general managers, etc.) are ineligible. Those with significant supervisory responsibilities, (i.e., coordinators, directors, etc.) should be considered for the supervisor award, or program award. Please to contact Spencer Parkinson at [sparkinson@svwater.com](mailto:sparkinson@svwater.com) or 801-495-5452 with any questions. Thank you!

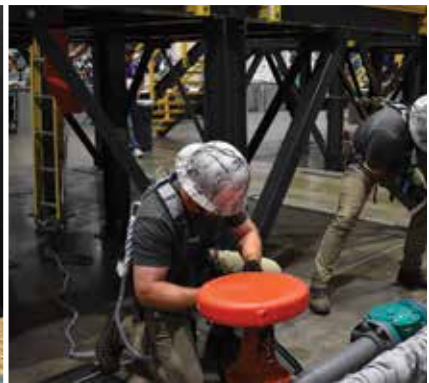
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## WEAU OPERATIONS CHALLENGE TEAMS REPRESENT AT WEFTEC 2024

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This year, WEAU was well represented at by CVWRF Wasted Gas and Wasatch All-Stars. The Wasatch All-stars placed 6th overall, 2nd in safety, and 3rd in maintenance. Central Valley Water Reclamation Facility's Wasted Gas placed 7th overall and took 6th in process. Great work, teams! [ENR](#)







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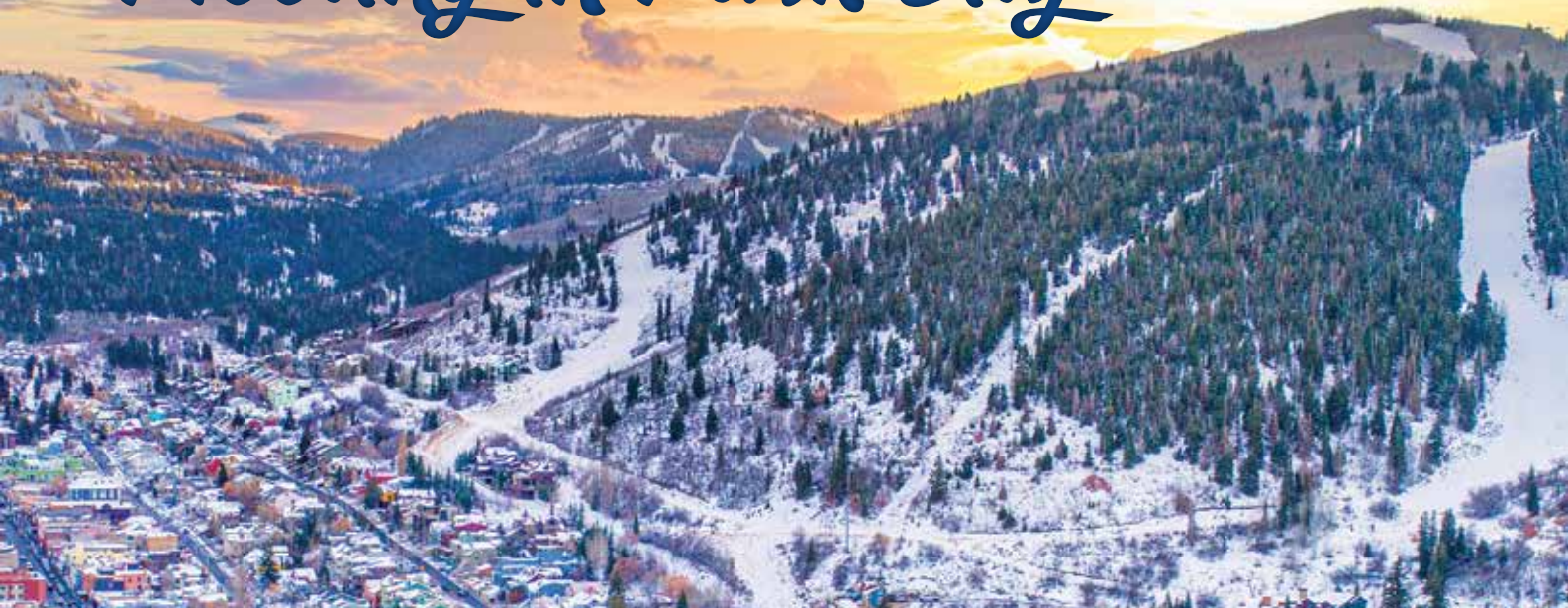


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# WEAU Hosts WEFMAX Meeting in Park City



By Clint Rogers, WEF Delegate

**WEF** Member Association Exchange (WEFMAX) meetings are designed to bring member association leadership groups (think board members, directors, committee chairs, PWO reps, etc.) together for training and networking. Each year WEF asks three member associations to host a WEFMAX meeting. In 2024, the locations included Park City, UT; St Petersburg, FL, and Alexandria, VA. It was a record year of attendance and WEF celebrated 50 years of WEFMAX meetings.

WEAU was excited to host an in-person WEFMAX, and a committee consisting of Sarah Ward, Sherry Sheffield, Chad Burrell, Steve Myers, Jeff Beckman, and myself, Clint Rogers, was formed to help share the load of planning and executing the best WEFMAX ever. Additionally, the Student and Young Professionals Committee helped plan an opening social and ice breaker event. We made it a goal to involve as many of our WEAU members as possible to help people see the benefit of WEFMAX participation.

The theme for our event was *Putting the We in WEF: Investing in the Potential of Our Membership*. We shared examples of recent investments that WEAU has made to add value to our membership experience and

to provide opportunities to our members. Specific examples of these investments include our operator certification support program, leadership development seminar, southern Utah Ops Challenge practice



*WEFMAX attendees paused the training discussions just long enough to assemble bikes to be donated to kids in our local communities.*

equipment, and outreach to other water industry associations.

Thanks to all who helped make WEFMAX Park City a huge success! WEAU put the rest of WEF on notice.



*Attendees traveled to Park City from locations in US and Canada for WEFMAX.*

# WEAU Hosts WEFMAX Meeting in Park City



A de facto WEFMAX motto is that there are two types of people in the world: 1) friends and, 2) friends we haven't met yet.



WEAU treated our guests to a social and tour at the Utah Olympic Park.



WEFMAX discussions help MAs learn from each other and help us all to be better volunteer leaders. [D11](#)



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Keysha Hadley, Director of Operations and Project Management
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# DIGESTED news

## 2024-2025 BUYERS' GUIDE

The *Digested News* Buyers' Guide consists of two sections: a listing of products and services categories and an alphabetical listing of companies/organizations and contact information.

1. Search under CATEGORICAL LISTINGS for the products/services you require.
2. Note the companies listed under your products/services.
3. Refer to the COMPANY LISTINGS for those companies' contact information.

### CATEGORICAL LISTINGS

#### Activated Carbon

Carbon Enterprises Inc.

#### Advanced Metering Infrastructure

Mountainland Supply Company

#### Aeration Systems/Diffusers

Aqua-Aerobic Systems, Inc.  
Cogent  
Goble Sampson Associates

#### Blowers/Instruments/Gas Detection

Cogent  
Coombs Hopkins  
Goble Sampson Associates  
Sulzer Pumps Solutions  
Waterford Systems

#### Catch Basin Cleaning Equipment

Goble Sampson Associates  
Val Kotter & Sons, Inc.

#### Coatings, Lining, and Corrosion Control

Integrity Inspection Solutions, Inc.

#### Condition Assessment

DN Tanks

#### Contractors

Archer Western Construction  
Goble Sampson Associates  
Twin D, Inc.  
Val Kotter & Sons, Inc.

#### CSO and Stormwater Equipment

Aqua-Aerobic Systems, Inc.

#### Design-Build Services

Archer Western Construction  
Carollo Engineers  
DN Tanks  
Goble Sampson Associates

#### Engineers/Consultants

AE2S  
Bowen Collins & Associates, Inc.  
Brown and Caldwell  
Carollo Engineers  
Davidson Sales & Engineering  
Forsgren Associates, Inc.

Goble Sampson Associates  
Sunrise Engineering, Inc.  
Val Kotter & Sons, Inc.

#### Equipment Representation

Coombs Hopkins

#### Filtration

Ambiente H2O Inc.  
Aqua-Aerobic Systems, Inc.  
Carbon Enterprises Inc.  
Coombs Hopkins  
Davidson Sales & Engineering  
Goble Sampson Associates  
Rocky Mountain Valves & Automation, Inc.

#### Filter Media Remove/ Supply and Install

Carbon Enterprises Inc.

#### Grit Removal and Washing

Coombs Hopkins  
Davidson Sales & Engineering  
Goble Sampson Associates  
Waterford Systems

# 2024-2025 BUYERS' GUIDE

## Grit Removal Systems

Cogent  
Lakeside Equipment Corporation  
Smith & Loveless, Inc.

## Headworks Screening

Ambiente H2O Inc.  
Cogent  
Coombs Hopkins  
Goble Sampson Associates  
Lakeside Equipment Corporation

## Intake Screens

Lakeside Equipment Corporation

## Inspectors/Locators

Integrity Inspection Solutions, Inc.

## Manhole Inspection/ Location/Mapping

Integrity Inspection Solutions, Inc.  
Twin D, Inc.  
Val Kotter & Sons, Inc.

## Membrane Bioreactors

Smith & Loveless, Inc.

## Odor Control

Coombs Hopkins  
Goble Sampson Associates

## Packaged Pump Stations

Goble Sampson Associates  
Hidrostal USA  
Nickerson Company Inc.  
Smith & Loveless, Inc.  
Waterford Systems

## Packaged Treatment Plants

Lakeside Equipment Corporation

## Pipe Cleaning and Televising

Integrity Inspection Solutions, Inc.  
Twin D, Inc.  
Val Kotter & Sons, Inc.

## Pump Install and Removal

Nickerson Company Inc.

## Pumps/Pump Systems

Ambiente H2O Inc.  
Bowen Collins & Associates, Inc.  
Coombs Hopkins

Davidson Sales & Engineering  
Goble Sampson Associates  
Hidrostal USA  
Lakeside Equipment Corporation  
Mountainland Supply Company  
Nickerson Company Inc.  
Smith & Loveless, Inc.  
Sulzer Pumps Solutions

## Regulatory Compliance

AE2S

## Residuals/Waste Management

Carollo Engineers  
Goble Sampson Associates  
Prime Solutions, Inc.  
Sulzer Pumps Solutions

## SCADA

Bowen Collins & Associates, Inc.

## Sewer and Storm Drain Rehab

Val Kotter & Sons, Inc.

## Sewer Flow Monitoring (Sanitary, Storm, and CSO)

Carollo Engineers  
Goble Sampson Associates  
Rocky Mountain Valves & Automation, Inc.

## Septage Receiving Systems

Lakeside Equipment Corporation

## Sludge Dewatering

Ambiente H2O Inc.  
Cogent  
Coombs Hopkins  
Goble Sampson Associates  
Hidrostal USA  
Prime Solutions, Inc.  
Rocky Mountain Valves & Automation, Inc.  
Sulzer Pumps Solutions

## Storage Tanks/Reservoir Systems

DN Tanks  
Goble Sampson Associates  
Pittsburg Tank & Tower Maintenance Co.  
Sunrise Engineering, Inc.

## Stormwater Detention and Treatment

AE2S  
DN Tanks

## Studies/Master Plans

Bowen Collins & Associates, Inc.  
Brown and Caldwell  
Sunrise Engineering, Inc.

## Tank Inspection and Maintenance

Pittsburg Tank & Tower Maintenance Co.

## Tools and Equipment

Coombs Hopkins  
Mountainland Supply Company

## Ultraviolet Disinfection

Coombs Hopkins  
Goble Sampson Associates  
Waterford Systems

## Valves

Mountainland Supply Company  
Nickerson Company Inc.  
Rocky Mountain Valves & Automation, Inc.

## Video Pipeline Inspection Equipment

Twin D, Inc.  
Val Kotter & Sons, Inc.

## Water/Wastewater Treatment Systems

AE2S  
Ambiente H2O Inc.  
Aqua-Aerobic Systems, Inc.  
Archer Western Construction  
Bowen Collins & Associates, Inc.  
Brown and Caldwell  
Carollo Engineers  
Coombs Hopkins  
Davidson Sales & Engineering  
DN Tanks  
Forsgren Associates, Inc.  
Goble Sampson Associates  
Hidrostal USA  
Lakeside Equipment Corporation  
Prime Solutions, Inc.  
Rocky Mountain Valves & Automation, Inc.  
Smith & Loveless, Inc.  
Sulzer Pumps Solutions  
Sunrise Engineering, Inc.  
Waterford Systems

## Water/WW/Pipeline/Environmental Design

AE2S  
Goble Sampson Associates  
Rocky Mountain Valves & Automation, Inc.  
Sunrise Engineering, Inc.

## COMPANY LISTINGS

### AE2S



3400 North Ashton Boulevard, Suite 105  
Lehi, UT 84043  
801-331-8489  
[sam.fankhauser@ae2s.com](mailto:sam.fankhauser@ae2s.com)  
[www.ae2s.com](http://www.ae2s.com)

### Ambiente H2O Inc.

623 East 2100 South, Suite 205  
Salt Lake City, UT 84106  
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[bproch@ambienteh2o.com](mailto:bproch@ambienteh2o.com)  
[www.ambienteh2o.com](http://www.ambienteh2o.com)

### Aqua-Aerobic Systems, Inc.



6306 North Alpine Road  
Loves Park, IL 61111  
815-654-2501  
[solutions@aqua-aerobic.com](mailto:solutions@aqua-aerobic.com)  
[www.aqua-aerobic.com](http://www.aqua-aerobic.com)

### Archer Western Construction



10436 South, 1055 West, Suite 101  
South Jordan, UT 84095  
801-503-6954  
[jthorne@walshgroup.com](mailto:jthorne@walshgroup.com)  
[www.archerwestern.com](http://www.archerwestern.com)

### Bowen Collins & Associates, Inc.

154 East 14000 South  
Draper, UT 84095  
801-495-2224 F: 801-495-2225  
[jbeckman@bowencollins.com](mailto:jbeckman@bowencollins.com)  
[www.bowencollins.com](http://www.bowencollins.com)

### Brown and Caldwell



6975 South Union Park Center  
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[jharbin@brwnncald.com](mailto:jharbin@brwnncald.com)  
[www.brownandcaldwell.com](http://www.brownandcaldwell.com)

### Carbon Enterprises Inc.

28205 Scippo Creek Road  
Circleville, OH 43113  
800-344-5770 F: 740-420-9472  
[ryan@ceifiltration.com](mailto:ryan@ceifiltration.com)  
[www.ceifiltration.com](http://www.ceifiltration.com)

### Carollo Engineers

1265 Fort Union Boulevard, Suite 200  
Midvale, UT 84047  
801-233-2500 F: 801-233-2501  
[adomonoske@carollo.com](mailto:adomonoske@carollo.com)  
[www.carollo.com](http://www.carollo.com)

### Cogent



14452 West 44th Avenue  
Golden, CO 80403  
303-584-9000  
[jcoyle@cogentcompanies.com](mailto:jcoyle@cogentcompanies.com)  
[www.cogentcompanies.com](http://www.cogentcompanies.com)

### Coombs Hopkins



8706 South 700 East, Suite 201  
Sandy, UT 84070  
801-674-2177  
[james@chcwater.com](mailto:james@chcwater.com)  
[www.coombshopkins.com](http://www.coombshopkins.com)

### Davidson Sales & Engineering



2441 South 3850 West, Site B  
West Valley City, UT 84119  
801-977-9200 F: 801-977-9300  
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[www.dseslc.com](http://www.dseslc.com)

### DN Tanks



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619-440-8181 F: 619-440-8653  
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[www.dntanks.com](http://www.dntanks.com)

### Forsgren Associates, Inc.

370 East 500 South, Suite 200  
Salt Lake City, UT 84111  
801-364-4785 F: 801-364-4802  
[rconover@forsgren.com](mailto:rconover@forsgren.com)  
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## Goble Sampson Associates



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[cpark@goblesampson.com](mailto:cpark@goblesampson.com)  
[www.goblesampson.com](http://www.goblesampson.com)

## Hidrostal USA



2225 White Oak Circle, Suite 101  
Aurora, IL 60502  
630-948-3355 F: 630-948-3353  
[info@hidrostalpumps.com](mailto:info@hidrostalpumps.com)  
[www.hidrostalpumps.com](http://www.hidrostalpumps.com)

## Integrity Inspection Solutions, Inc.



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Caldwell, ID 83605  
208-941-1733 F: 844-351-6902  
[integrity@iispipeline.com](mailto:integrity@iispipeline.com)  
[www.iispipeline.com](http://www.iispipeline.com)

## Lakeside Equipment Corporation



1022 East Devon Avenue  
Bartlett, IL 60103  
630-837-5640 F: 630-837-5647  
[sales@lakeside-equipment.com](mailto:sales@lakeside-equipment.com)  
[www.lakeside-equipment.com](http://www.lakeside-equipment.com)

## MGC Contractors



2975 West Executive Parkway, Suite 120  
Lehi, UT 84043  
801-739-6948  
[mail@mgcontractors.com](mailto:mail@mgcontractors.com)  
[www.mgccontractors.com](http://www.mgccontractors.com)

## Mountainland Supply Company



PO Box 10  
Orem, UT 84059  
801-224-6050  
[info@mountainland.com](mailto:info@mountainland.com)  
[www.mountainlandsupply.com](http://www.mountainlandsupply.com)

## Nickerson Company Inc.

2301 West Indiana Avenue  
Salt Lake City, UT 84104  
800-584-6973 F: 801-973-8267  
[sales@nicopumps.com](mailto:sales@nicopumps.com)  
[www.nicopumps.com](http://www.nicopumps.com)

## Pittsburg Tank & Tower Maintenance Co.

PO Box 913  
Henderson, KY 42419  
270-826-9000  
[jpyles@pttg.com](mailto:jpyles@pttg.com)  
[www.pttg.com](http://www.pttg.com)

## Prime Solutions, Inc.



610 South Platt Street  
Otsego, MI 49078  
269-694-666 F: 269-694-1297  
[kelly@psirotary.com](mailto:kelly@psirotary.com)  
[www.psirotary.com](http://www.psirotary.com)

## Rocky Mountain Valves & Automation, Inc.



1310 Swaner Road  
Salt Lake City, UT 84104  
801-438-1038 Fax: 901-438-1039  
[ben@rockymtvalves.com](mailto:ben@rockymtvalves.com)  
[www.rockymtvalves.com](http://www.rockymtvalves.com)

## Smith & Loveless, Inc.



14040 Sante Fe Trail Drive  
Lenexa, KS 66215  
913-888-5201 F: 913-888-2173  
[answers@smithandloveless.com](mailto:answers@smithandloveless.com)  
[www.smithandloveless.com](http://www.smithandloveless.com)

## Sulzer Pumps Solutions



900 Threadneedle Street, Suite 700  
Houston, TX 77079-2952  
[www.sulzer.com](http://www.sulzer.com)

## Sunrise Engineering, Inc.

25 East 500 North  
Fillmore, UT 84631  
800-560-6151  
[contactus@sunrise-eng.com](mailto:contactus@sunrise-eng.com)  
[www.sunrise-eng.com](http://www.sunrise-eng.com)

## Twin D, Inc.


3120 North 675 East  
Layton, UT 84041  
801-771-3038  
[stuart.denny@twind.net](mailto:stuart.denny@twind.net)  
[www.twind.net](http://www.twind.net)

## Val Kotter & Sons, Inc.

1035 West Forest Street  
Brigham City, UT 84302  
435-734-9598 F: 435-734-9870  
[pearl@valkotterandsons.com](mailto:pearl@valkotterandsons.com)  
[www.valkotterandsons.com](http://www.valkotterandsons.com)

## Waterford Systems



2850 East 3300 South, Suite 201  
Millcreek, UT 84109  
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# 2024-2025



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# WHAT DOES AI KNOW? (APPLE AI JOINS THE PARTY)

Intro and prompt by Ben Skousen, response by ChatGPT, and editing by Apple AI

Welcome back, *Digested News* readers. This is the fifth installment of our series about artificial intelligence (AI) written mostly by AI. If you recall, this series uses AI to learn more about AI. The first four installments have used a conversational AI called ChatGPT with the fourth installment also using Copilot by Microsoft to compare responses. Once again, this article on what life would be like without clean water, was originally written by ChatGPT. However, Apple recently released its version of artificial intelligence that it calls Apple Intelligence, or “AI.” One feature of Apple Intelligence is the ability to rewrite text to make it more professional, friendly, or concise. Why not test all three on something written by ChatGPT?

#### **PROMPT (by Ben):**

Write a one-page newsletter article about what life would be like without clean water.

#### **ORIGINAL RESPONSE (by ChatGPT):**

What Life Would Be Like Without Clean Water

Imagine waking up every morning without the ability to turn on a tap and drink fresh, clean water. It's hard to picture, but for millions of people around the world, this is a daily reality. Clean water is something most of us take for granted, but it is, without a doubt, the foundation of life itself. Without it, the world would look vastly different – and not in a good way.

First, consider the impact on health. Waterborne diseases like cholera, dysentery, and typhoid thrive when access to clean water

is limited. Without reliable sanitation, these diseases spread quickly, claiming lives and overwhelming healthcare systems. In areas without clean water, people may be forced to rely on contaminated sources – rivers, lakes, or stagnant ponds – increasing their risk of illness. The simple act of washing hands, which we often do without thinking, becomes a luxury. Without clean water, basic hygiene becomes a challenge, leading to widespread illness and shortened life expectancies.

Next, think about food. Water is essential for growing crops and sustaining livestock. Without clean water, agriculture would struggle, potentially causing severe food shortages. Farmers would find it nearly impossible to irrigate their fields or provide sufficient water to their animals. The resulting food scarcity could lead to higher prices and malnutrition, affecting not just those in the most vulnerable areas, but the global food supply chain as well.

Water is also crucial for industry. Many industries rely on clean water for manufacturing, cooling systems, and various processes. Without access to water, many sectors – from textiles to technology – would be severely hampered. A lack of water would also affect the energy sector. Hydroelectric plants, which provide a significant amount of the world's electricity, would be unable to operate efficiently, leading to power shortages.

Beyond health, food, and industry, imagine the impact on daily life. Without clean water, everyday activities like cooking, bathing, cleaning, and even brushing your teeth would become major challenges.

Women and children, often tasked with collecting water, would spend hours each day walking long distances to fetch water from distant, often unsafe sources. This would leave little time for education, work, or leisure. In many places, access to water could become a source of conflict, as communities fight over limited supplies.

The truth is, without clean water, our modern way of life would grind to a halt. It's a vital resource that connects us all, regardless of where we live. While many communities are working tirelessly to address water scarcity, it's clear that clean water is a privilege we must not take for granted. The future depends on how we manage and protect our water resources today. Whether it's supporting water conservation efforts or advocating for better water infrastructure, we all have a role to play in ensuring clean water is available for generations to come.

#### **PROFESSIONAL REWRITE (by Apple Intelligence):**

Imagine waking up each morning without the ability to access clean, fresh water for personal consumption. This reality affects millions of individuals worldwide, highlighting the significance of clean water as a fundamental necessity for life.

Firstly, consider the profound impact on public health. Waterborne diseases such as cholera, dysentery, and typhoid flourish in environments with limited access to clean water. Without reliable sanitation systems, these diseases spread rapidly, causing immense loss of life and overwhelming healthcare facilities. In regions lacking



clean water, individuals may resort to contaminated sources like rivers, lakes, or stagnant ponds, significantly elevating their susceptibility to illness. The seemingly simple act of handwashing becomes a luxury, and basic hygiene becomes a challenge, leading to widespread disease and shortened life expectancies.

Secondly, contemplate the consequences for agriculture. Water is indispensable for crop growth and livestock sustenance. Without access to clean water, agricultural production would face substantial challenges, potentially leading to severe food shortages. Farmers would encounter difficulties in irrigating their fields and providing adequate water to their animals. The resulting food scarcity could result in elevated prices and malnutrition, affecting not only vulnerable populations but also the global food supply chain.

Furthermore, water is crucial for various industries. Numerous sectors, including textiles and technology, rely on clean water for manufacturing processes, cooling systems, and other essential functions. The absence of water would severely hinder these industries, impacting the broader economy. Additionally, the energy sector would be severely affected, as hydroelectric plants, which provide a substantial portion of the world's electricity, would struggle to operate efficiently, leading to potential power shortages.

Beyond health, food, and industry, imagine the profound impact on daily life that would ensue without access to clean water. Essential activities such as cooking, bathing, cleaning, and even oral hygiene would become arduous and potentially hazardous. Women and children, often burdened with the task of water collection, would spend countless hours each day traversing extended distances to obtain water from distant and often unsafe sources. This would severely curtail their time for education, employment, and leisure pursuits. In many regions, the availability of water could even become a source of conflict, as communities vie for limited supplies.

Undeniably, the absence of clean water would cripple our modern way of life. It serves as a fundamental resource that unites us all, irrespective of our geographical location.

While numerous communities are diligently engaged in addressing water scarcity, it is evident that clean water is a privilege that we must not squander. The future of our society hinges on our proactive management and protection of water resources. Whether through supporting water conservation initiatives or advocating for improved water infrastructure, we all bear a collective responsibility to ensure the availability of clean water for future generations.

#### **FRIENDLY REWRITE** **(by Apple Intelligence):**

Imagine waking up every morning without the chance to turn on a tap and get a refreshing drink of water. It's hard to imagine, but for millions of people around the world, this is a daily reality. Clean water is something most of us take for granted, but it's the backbone of life itself. Without it, the world would look very different, and not in a good way.

First, think about the impact on health. Waterborne diseases like cholera, dysentery, and typhoid love to thrive when access to clean water is limited. Without reliable sanitation, these diseases spread like wildfire, claiming lives and overwhelming healthcare systems. In places without clean water, people might have to rely on dirty sources like rivers, lakes, or stagnant ponds, increasing their risk of getting sick. The simple act of washing our hands, which we often do without thinking, becomes a luxury. Without clean water, basic hygiene becomes a challenge, leading to widespread illness and shorter life expectancies.

Next, think about food. Water is essential for growing crops and keeping livestock healthy. Without clean water, farming would struggle, potentially causing serious food shortages. Farmers would have a hard time watering their fields or giving their animals enough water. The resulting food scarcity could lead to higher prices and malnutrition, affecting not just those in the most vulnerable areas, but the whole world's food supply chain as well.

Water is also crucial for industry. Many industries rely on clean water for making

things, cooling systems, and different processes. Without access to water, many sectors, from textiles to technology, would be severely affected. A lack of water would also affect the energy sector. Hydroelectric plants, which provide a lot of the world's electricity, would be unable to operate efficiently, leading to power shortages.

Imagine the impact on our daily lives if we didn't have clean water. Cooking, bathing, cleaning, and even brushing our teeth would become a real pain. Women and children, who often have to collect water, would spend hours each day walking long distances to get water from faraway, often unsafe places. This would leave them with little time for school, work, or fun. In many places, fighting over water could even turn into a conflict.

The truth is, without clean water, our modern way of life would come to a screeching halt. It's a resource that connects us all, no matter where we live. While many communities are working hard to fix water problems, it's clear that clean water is something we should never take for granted. The future depends on how we take care of and protect our water resources today. Whether it's helping to save water or speaking up for better water systems, we all have a role to play in making sure clean water is available for everyone, forever.

#### **CONCISE REWRITE** **(by Apple Intelligence):**

Imagine waking up daily without access to clean water. Millions worldwide face this reality, and clean water is the foundation of life.

Health suffers without clean water. Waterborne diseases thrive in limited access, spreading quickly and overwhelming healthcare systems. Contaminated sources like rivers and stagnant ponds increase the risk of illness, and basic hygiene becomes a challenge, leading to widespread illness and shortened life expectancies.

Agriculture struggles without clean water. Irrigation and animal water supply are compromised, potentially causing severe food shortages and higher prices. Malnutrition affects vulnerable areas and the global food supply chain.



Industries rely on clean water for manufacturing, cooling, and processes. Many sectors, from textiles to technology, would be severely hampered. The energy sector faces challenges too, with hydroelectric plants unable to operate efficiently, leading to power shortages.

Imagine the impact of water scarcity on daily life. Without clean water, cooking, bathing, cleaning, and brushing teeth become challenges. Women and children, often tasked with collecting water, spend hours walking long distances to unsafe

sources, leaving little time for education, work, or leisure. In many places, water access becomes a source of conflict.

Clean water is a vital resource that connects us all. While communities work to address water scarcity, it's clear that clean water is a privilege we must not take for granted. The future depends on how we manage and protect our water resources today. Supporting water conservation efforts or advocating for better water infrastructure is essential to ensure clean water for future generations.

What do you think? Do you notice a change of tone between the original and the rewrites? Is one similar to your own writing style? As someone who writes TMs and engineering reports, I think the concise rewrite is the closest to my writing style. However, all strike me as being rather artificial.

*Also, you may have noticed that this article's banner image is different from our previous articles. The new image was created by AI using Microsoft Designer. Designer can create images, stickers, logos, and more. Access Designer at: <https://designer.microsoft.com/home>. *

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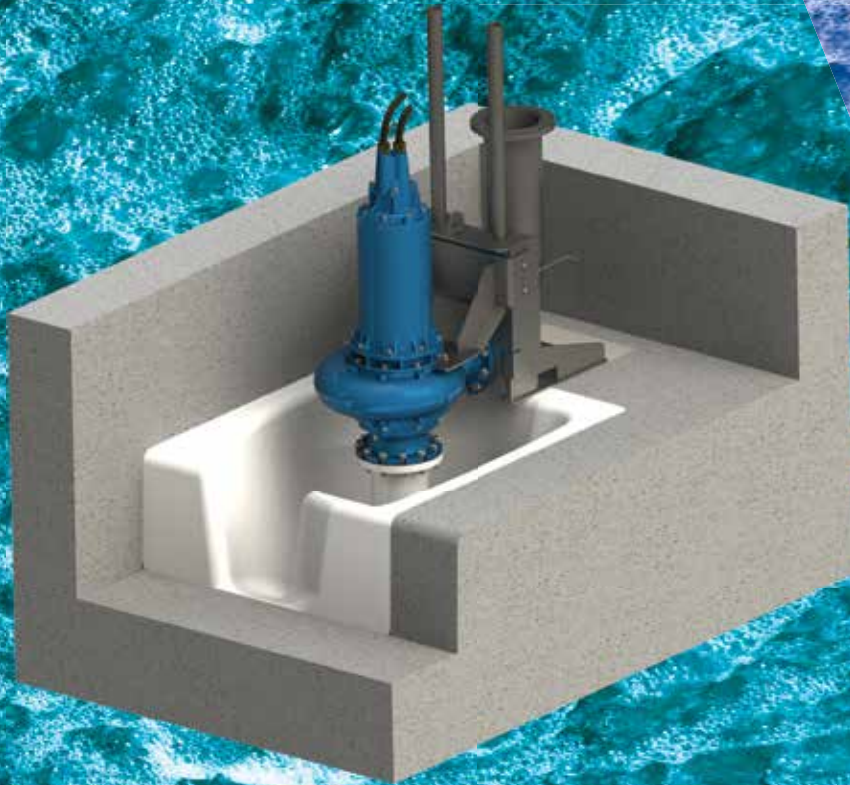


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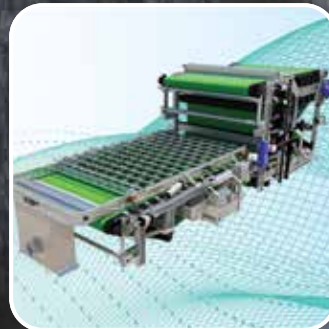
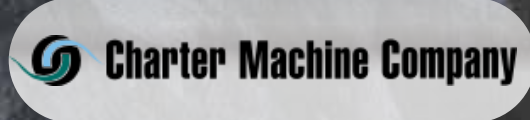
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