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Recruiting: Doing it Differently

NACWA WORKFORCE DEVELOPMENT AWARD WINNERS HIGHLIGHT INNOVATIVE AND EFFECTIVE WAYS TO RECRUIT, TRAIN AND RETAIN A NEW GENERATION OF CLEAN-WATER PROFESSIONALS

By Ted J. Rulseh, Editor

A changing workforce requires change in how water and wastewater agencies recruit people to accommodate growth and fill voids left by retirement.

Each year the National Association of Clean Water Agencies presents Workforce Development Awards to recognize outstanding programs that help meet needs for qualified, diverse and knowledgeable water professionals.

For 2023, NACWA conducted video interviews with leaders from the six Workforce Development Award-winning organizations. During the interviews, these professionals dive into the challenges they faced, the results they achieved and the lessons they learned about recruiting and retaining staff. Here are a few highlights of the videos:

Des Moines (Iowa) Metropolitan Wastewater Reclamation Authority. The authority launched an apprenticeship program in 2009. Recruiting operators who already had large-facility experience and Iowa licensure had been extremely difficult. Students begin by taking classes at the local community college and finish with an apprenticeship certificate and about two-thirds of the credits needed for an associate degree in water and wastewater treatment. Operators then are able to train new people who already grasp the basics of the trade.

Hampton Roads (Virginia) Sanitation District. Facing a wave of retirements, the utility formed a partnership with a local job corps program that has delivered a group of promising young operators. The program covers eight trades, and apprentices are exposed to a wide variety of career options. Each year the program includes 100 to 120 apprentices. The role of the job corps includes working with school systems to identify prospective apprentices, helping them through the application process and helping the district with interviewing and selection.

Jefferson County (Alabama) Commission. This utility's apprenticeship program takes young people with no experience and guides them through a two-year process to earn Grade 2, 3 and 4 certifications. The commission also started a high school internship program for wastewater treatment to introduce students to the profession. One aspect of the program is to improve and sustain workforce diversity. Plant tours are an early component of the recruitment process. Nearly two-thirds of the 59 apprentices hired since the program's inception are still with the commission and have full-time positions.

Madison (Wisconsin) Metropolitan Sewerage District. Diversity was a key aim of this district's recruitment program, which reached out to underrepresented groups in order to attract prospective team members into a two-year training program. The district added new positions for trainers to help drive the program. Leaders found that a more diverse workforce reflecting the character of the community infused the team with different perspectives and new ways of solving problems. During the COVID pandemic, the district instituted paid leave to encourage team members to stay home if they contracted the disease.

NACWA conducted video interviews with leaders from the six Workforce Development Award-winning organizations on their challenges, results, and lessons learned.

Mount Pleasant (South Carolina) Waterworks. This utility went through a rebranding aimed at aligning the workforce behind the mission and goals. Team members were deeply involved in the creation of a new strategic plan. For leadership, close communication with and investment in staff was key to achieving buy-in. The strategic plan was built on the I-Values of innovation, inspiration, integrity and involvement, and the We-Statements of what the team members intend to accomplish together.

King County (Washington) Wastewater Treatment Division. This apprenticeship program helps replace retiring team members with qualified people trained internally and ensures that the workforce looks like the community the division serves. The program sees more than 70% of trainees become long-term team members in the division. The program sought to remove unintended barriers in recruitment and hiring and so attract a larger pool of candidates. Barriers included requirements for associate degrees or wastewater certification. Now people can apply with no background in wastewater and no higher education.

You can visit nacwa.org/news-publications/summer-2023/2023-sa-workforce-interviews to view all six videos, which range from about nine to 15 minutes long. By hearing from these innovators you're likely to pick up ideas that can help you recruit more successfully and build an effective workforce for today and years to come. tpo

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EXPERT Q&A

Activated Carbon and PFAS

In the world of filtration technology, activated carbon stands out as a key player. Neal Megonnell, vice-president of technical services at AqueoUS Vets, brings his wealth of knowledge to our online readers in this Q&A examining the nuances of activated carbon, including its role in combating PFAS contamination.

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OVERHEARD ONLINE

"One of the biggest comments we hear from the teachers is that this is the first time most of their students have visited their local waterway."

Florida Water District Teaches Responsible Water Use
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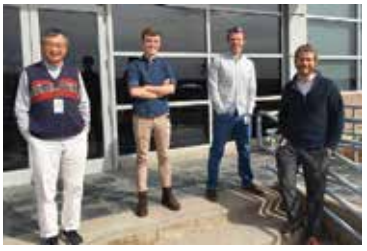
PHOSPHORUS RECOVERY

Revolving Algal Biofilm System



Researchers recently developed a Revolving Algal Biofilm system that uses specially selected algal strains to efficiently remove and recover phosphorus from wastewater. This system not only aims to prevent harmful algal blooms but also transforms algae into resources like agricultural fertilizer and bioenergy feedstocks.

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WASTEWATER SURVEILLANCE

Improving COVID-19 Predictions

Researchers at Syracuse University found that testing wastewater for COVID-19 offers more accurate forecasts of hospital admissions than clinical data, with their models showing an 11% to 15% improvement in predicting hospitalizations. Read more about the study in this online article.

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The Secret Ingredient

A QUALITY TEAM, A QUALITY PROCESS AND QUALITY MATERIAL ARE NOT THE ONLY COMPONENTS OF AN AWARD-WINNING PROGRAM AT CENTRAL DAVIS SEWER DISTRICT

STORY: **Ted J. Rulseh** | PHOTOGRAPHY: **Kim Raff**

It's more than product quality that makes for an exemplary biosolids program at the Central Davis Sewer District in Utah.

The key ingredient, according to Manjot Masson, the district's assistant general manager, is concern for people. That includes district team members, people who live near the clean-water facilities and the customers who pay for and use the district's compost product.

"One thing we do well is that we have great relationships with our citizens," says Masson. "We make sure that they are being heard and that their concerns are addressed. I think that is why our biosolids program is doing well."

And clean-water professionals around the state have taken notice. The program received the 2022 Outstanding Biosolids Program Award from the Water Environment Association of Utah.

NOTED FOR EXCELLENCE

The Central Davis Sewer District provides wastewater collection and treatment for the cities of Farmington, Fruit Heights and Kaysville and surroundings northeast of Salt Lake City. The district previously won WEA of Utah awards for Outstanding Treatment Plant, Outstanding Collection System, Outstanding Pretreatment Program and Outstanding Safety Program.

> "One thing we do well is that we have great relationships with our citizens."
> **MANJOT MASSON**

On three occasions the district received the Operations and Maintenance Excellence Award from U.S. EPA Region 8. In 2004, the district was recognized with a Clean Water Act Award for outstanding operations and its biosolids program. In addition, staff members have received various honors for excellence in their fields.

The wastewater treatment plant (9.9 mgd design, 6 mgd average) has two trains that use different processes. A trickling filter train was commissioned in 1961, and an oxidation ditch train was added in the early 1990s. All influent passes through a headworks with two step screens (HUBER Technology and Waste Tech) and a band screen (Hydro-Dyne) and two grit classifiers (Waste Tech).

The flow is then divided for biological treatment. On the trickling filter side, the flow is sent to two primary clarifiers and then

to the two trickling filters in series. That is followed by settling in two secondary clarifiers. The oxidation ditch side has no primary clarifiers. Three screw pumps (Lakeside Equipment) send the flow to a pair of oxidation ditches (Ovivo), followed by four secondary clarifiers. Final effluent is chlorinated and discharged to Farmington Bay of the Great Salt Lake.

THE SOLIDS SIDE

Solids handling differs between the two treatment trains. On the trickling filter side, solids from the primary clarifiers are sent to two primary anaerobic digesters and a secondary digester. The material then goes to a gravity belt thickener (Alfa Laval) that increases solids content to 6.5% for land application or to a belt press (Andritz) that dewaters to 15% solids for compost. This Class B material is land-applied by district staff on 130 acres of district-owned hay fields.

Solids from the oxidation ditch side is thickened in the clarifiers and then sent to two inDENSE units (World Water Works), a gravimetric selection technology that retains denser biomass while the lighter fraction of mixed liquor suspended solids flows out as waste activated sludge. This process promotes higher density and improves settling characteristics.

The inDENSE system is followed by a pair of screw presses (FKC) that increase solids content to 15-29% solids. That material is composted from May to October and landfilled for the balance of the year. Biogas from the digesters is flared. "We don't produce enough to make utilization economically feasible," Masson says.

Central Davis Sewer District

Kaysville, Utah

cdsewer.org

SERVICE AREA:
Farmington, Fruit Heights and Kaysville areas

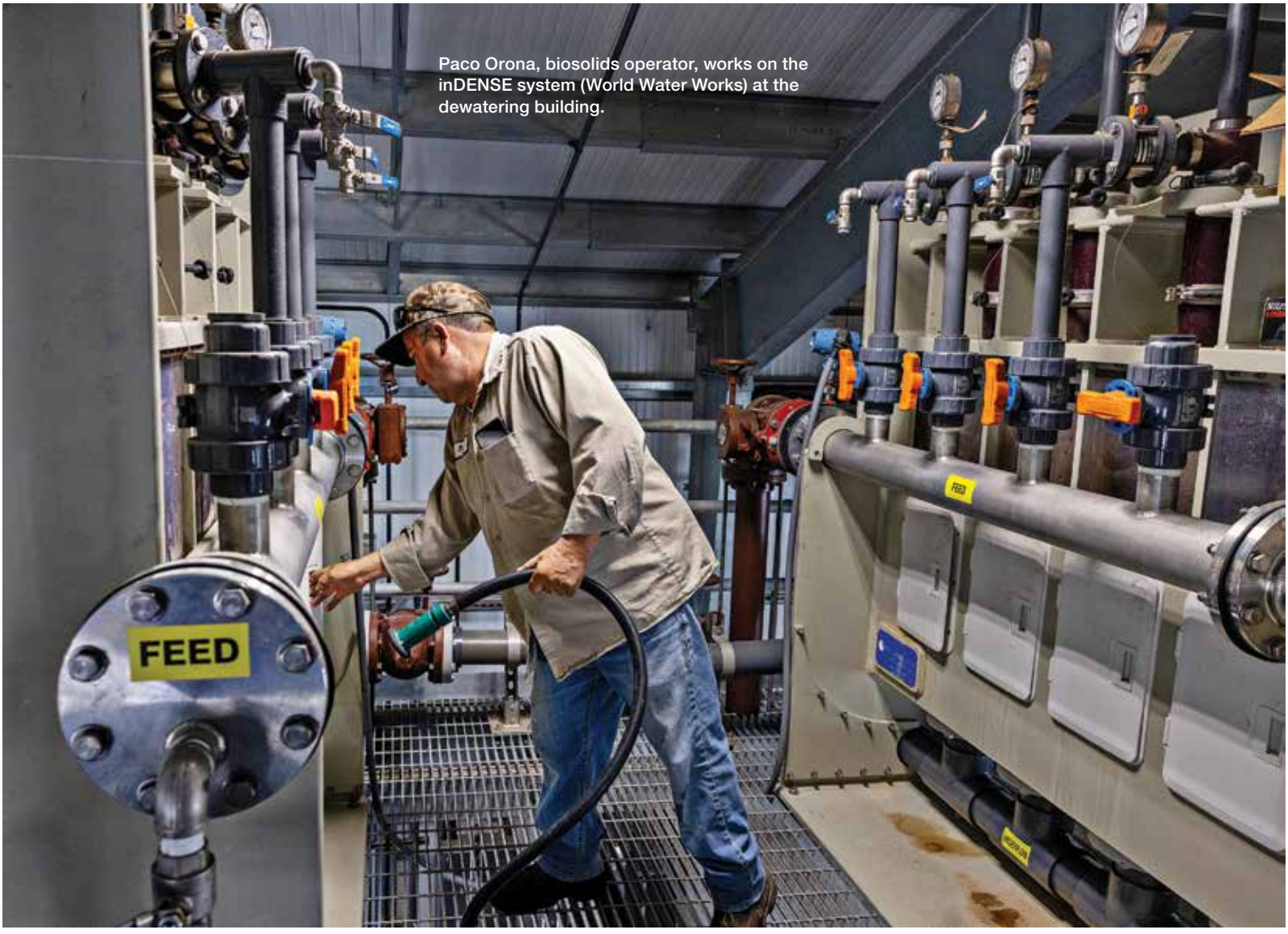
TREATMENT PLANT FLOWS:
9.9 mgd design, 6 mgd average

BIOSOLIDS PROCESS:
Thickened, composted

BIOSOLIDS USE:
Land application; compost for public sale

BIOSOLIDS VOLUME:
290 dry tons/year land-applied; 1,350 tons/year compost

AWARD:
2022 Outstanding Biosolids Program Award, WEA of Utah



Paco Orona, biosolids operator, works on the inDENSE system (World Water Works) at the dewatering building.

Manjot Masson, left, district assistant general manager, and Jace Woodrow, wastewater treatment operator and biosolids coordinator

FOR SENSITIVE NOSES

Team members at the Central Davis Sewer District are highly sensitive to odor complaints from residents.

"If we receive a complaint, we address it immediately," says Manjot Masson, assistant general manager. "Our staff goes out and talks to the citizen." When they go, they're equipped with two tools.

One is a Jerome analyzer (AMETEK Brookfield) able to detect and measure hydrogen sulfide in low concentrations. The other is a Nasal Ranger field olfactometer (St. Croix Sensory) that provides precise and consistent measurements of odor strength.

"If there is an odor it can measure, it can indicate what kind of intensity the citizen is smelling," Masson says. "The citizen can use it, too. Everybody's nose is different. We make sure we consider what they are sensing, not just what we are sensing."

MAKING THE PRODUCTS

Jace Woodrow, wastewater treatment operator and biosolids coordinator, observes, "We used to compost full-time. We started with windrows and used a turner. But as the community grew closer and closer to us, we switched to static pile aeration. Recently we began seeing an increase in odor complaints, and so now we haul to the landfill during the winter."

In the compost process, biosolids are placed in a mixer truck in a 1-to-1 (by weight) ratio with wood chips made from old pallets. "We pile that atop 8-inch HDPE pipes 120-140 feet long with 3/8-inch holes drilled every 6 inches," says Woodrow.

"We have a blower that runs off a timer. Every hour for seven minutes, it blows air through the pile. We don't have to turn the material or move it until we're ready to complete the process and dry and screen it. We build our piles in two-week increments. As we're building each pile, we cap it with old compost to create a biofilter on the top. After the two weeks we start blowing air through the pile and record the temperatures."

The specification calls for keeping the material temperature above 55 degrees C for more than three days. "We monitor the temperature for 22 days to meet our vector attraction reduction requirement," says Woodrow. "After that we kill the blowers and just let it sit there and cure." Compost made in summer often waits until the following year to be distributed to the public.

Paco Orona at the control panel for the FKC screw presses, which dewater biosolids content to 15-29% solids.

> "We used to compost full-time. We started with windrows and used a turner. But as the community grew closer to us, we switched to static pile aeration."
>
> **JACE WOODROW**

The finished product is ground and then screened to separate the smaller and larger particles. From there the compost is loaded into dump trucks and hauled to a receiving area where Brigham Justensen loads trucks and trailers for customers as they come in.

Paco Orona and Wesley Justensen work full-time in the dewatering facility, operating the screw presses, monitoring the polymer doses and the percent solids coming off the presses and running the mixer truck during composting season. *(continued)*

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> People call us nonstop starting in March and ask when [the compost is] going to be ready."
> **MANJOT MASSON**

HAPPY CUSTOMERS

The compost is popular, and not only with district residents. "People call us nonstop starting in March and ask when it's going to be ready," says Masson. "We have a webpage to let them know when it's coming because it runs out so fast sometimes when we have it. People come from all over to get it. Another treatment plant in the area sells compost but it's a little pricier. When we don't have compost, we send people there, and they say, 'It's not the same.'"

The district offers a fine compost and a coarser material that takes less time to produce. "They either bring a pickup truck or a trailer," says Masson. "If it's a pickup truck, we charge $10 to fill the bed." For anything larger the price is $20 for every three cubic yards.

Masson notes, "A lot of people say, 'We sent it to you, so shouldn't we get it for free?' So, if they shovel it themselves, they get it for free."

Sludges from the Central Davis district treatment process are converted to biosolids for land application and compost.

CHALLENGES AHEAD

The district's biosolids program operates under an Environmental Management System under the International Organization of Standardization (ISO 14001), supervised by the National Biosolids Partnership.

That program serves as a model for continuous improvement in environmental performance, regulatory compliance, quality management practices and relations with interested parties and stakeholders. It provides training and support to help organizations ensure that their programs are environmentally sound and protective of public health.

"I believe we are the only program in the state that does it," says Masson. "We have an audit every year where someone from NBP visits our facilities. As part of it we're required to have goals, so we're always progressing toward new gains in our biosolids program." The district received its first certification in 2007 and since then has received the Platinum Award under the program, most recently for 2022.

Wood chips are mixed with biosolids during the composting process (Roto-Mix twin-auger horizontal mixer).

Changes are ahead for the program that are not of the district's making. Masson notes that a freeway being built across the west side of the district's property will remove 40 acres of the hayfields on which biosolids are land-applied. A connecting road will take another several acres. "So we have to look at alternatives for land application, because a lot of our fields are going to be gone," says Masson.

"We've been looking at composting our Class B product with wood chips. We've tried composting it and have done so successfully. We just need to feel out our citizens and see if they have any concerns before we proceed with that. If we have odor complaints or other concerns, we will have to look at alternative solutions."

Whatever those solutions may be, Masson and her team take pride in the biosolids program. "We are glad to be able to give that product back to our community. And reusing the material is great for the environment." **tpo**

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Elementary school students take part in an exercise called the Water Cycle Dance.

PHOTOS COURTESY OF PRINCE WILLIAM COUNTY SERVICE AUTHORITY

Making a Splash With Kids

A VIRGINIA UTILITY'S AWARD-WINNING ONLINE LEARNING PROGRAM WITH MASCOTS DRIP AND DROP HELPS EDUCATORS TEACH STUDENTS ABOUT WATER

By Sandra Buettner

The Prince William County Service Authority has had a varied and engaging education program for years.

But when COVID hit, staff members knew they had to help teachers keep carrying the torch for water education. So they created the H2Go Kids! online learning program for educators and students in K-6. Materials use cartoon characters Drip (K-3) and Drop (4-6) to teach students about water and wastewater.

"There was a period right when the pandemic hit where even virtual learning was restricted," recalls Kathy Bentz, director of communications and community engagement. "So we needed something to keep the children entertained and interested in water conservation.

"For that reason, our community outreach group created H2Go Kids! It includes experiments, videos, games, activity and coloring sheets and comics, all related to water." Parents learned along with the children during COVID time, and they continue to work alongside their kids using the program.

WORKS OF ART

The Prince William County Service Authority, on the Potomac River, serves Virginia's second most populous county, with 506,000 residents. The authority's H.L. Mooney Advanced Water Reclamation Facility has a design capacity of 24 mgd.

In H2Go Kids!, the community outreach and graphic arts department created a program with fun characters that the kids could relate to. "Hence the birth of Drip and Drop," says Michelle Miranda, community outreach supervisor. "The characters have a distinct look and are featured throughout the activities."

Later more characters were created, including drops of water wearing hard hats, men and women, with different skin tones, making them diverse and so more relatable. The program was tested on staff members to see what activities their kids enjoyed and what they liked about them. H2Go Kids! is promoted through social media, emails to educators and news releases.

MESHING WITH THE CURRICULUM

The H2Go Kids! modules include various activities, all tied to Standard of Learning requirements for the grade levels and coinciding with the educators' curriculum.

The modules include:

Experiments. This section is the most popular section with kids and teachers. The experiments can be done at home and include determining the real weight of water, what to flush and not flush, creating a mini water cycle and creating a water filter.

Videos. Building on the lessons learned in the experiments, videos show students how to create their own experiments at home.

> "Our partnership with Prince William County schools is what makes this thing tick."
>
> **KATHY BENTZ**

Activity sheets. These items teach students how much water is used for everyday functions like washing dishes and taking a shower. They also include mazes and word search games.

Coloring sheets. Kids can color characters who show them why we need water; how to use water wisely; why fats, oils and grease do not belong in the drain; and more.

Writing prompts and comics. This section includes comic characters who teach about good water practices in fun and amusing ways.

Pipeline Pals. Clever cartoon characters use games to show the children how to be good water stewards.

Classroom presentations. Recorded and live classroom presentations via Zoom are available to teachers. The lessons align with the Standards of

Prince William County Service Authority team members lead students in an EnviroScape exercise that helps represent the flow of water in a watershed.

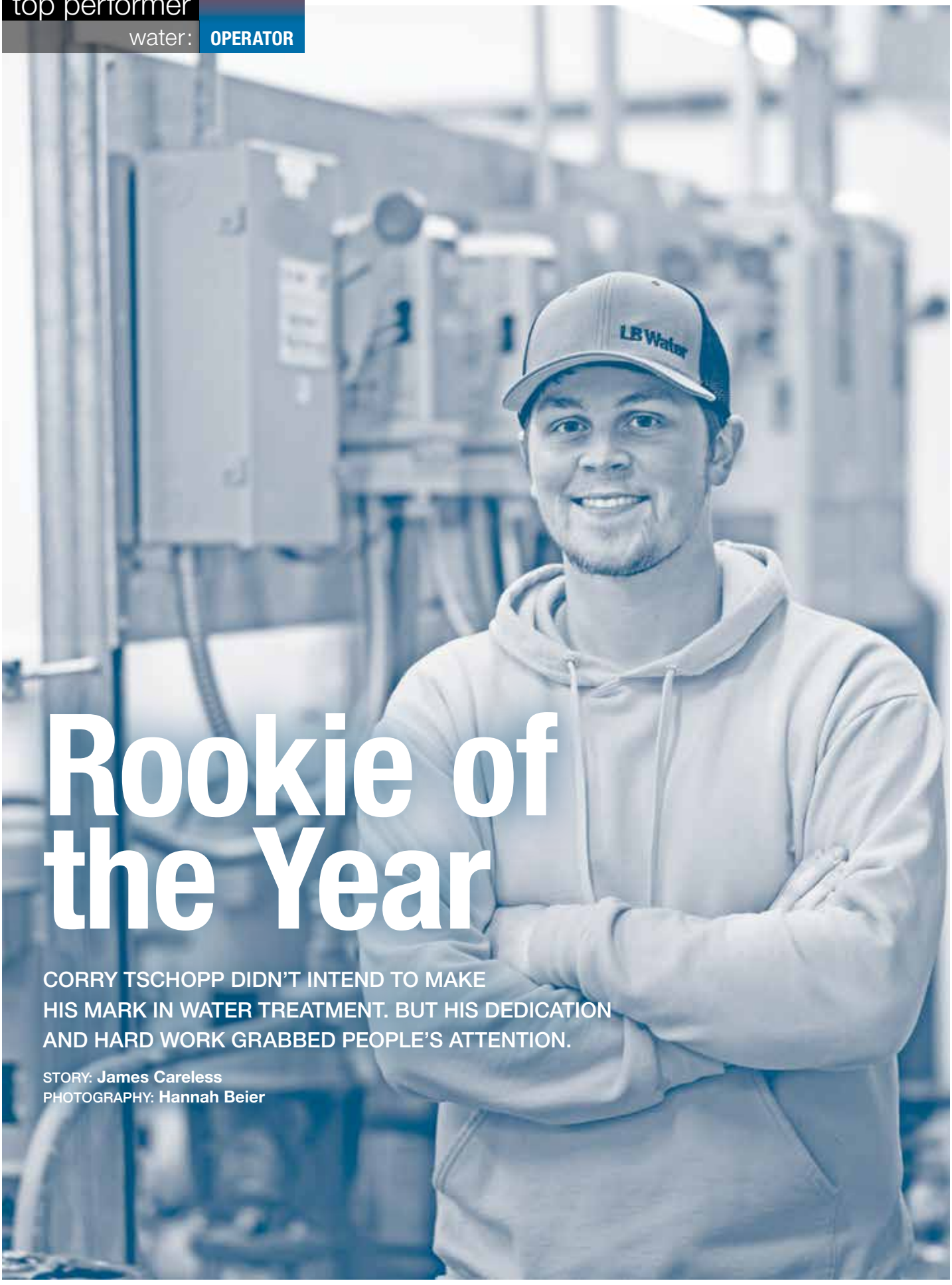
Learning for elementary students and cover content including aquifers, watersheds and pollution prevention.

WINNING RECOGNITION

H2Go Kids! won the 2023 National Environmental Achievement Award in the Public Information and Education in the E-Media category from the National Association for Clean Water Agencies.

Miranda notes that the program has been picking up steam and in the last four years has been viewed and used by some 40,000 educators and students. "The educators help us keep track of the numbers," she says. Some teachers who have relocated still contact the authority to use the program in their new positions.

"Our partnership with Prince William County schools is what makes this thing tick," says Bentz. "The schools have a foundation called SPARK, for Supporting Partnerships and Resources for Kids, that connects our community to the schools. It's an amazing foundation with the educators." tpo



Corry Tschopp, certified water operator, Tower City Borough Authority

Rookie of the Year

CORRY TSCHOPP DIDN'T INTEND TO MAKE HIS MARK IN WATER TREATMENT. BUT HIS DEDICATION AND HARD WORK GRABBED PEOPLE'S ATTENTION.

STORY: **James Careless**
PHOTOGRAPHY: **Hannah Beier**

Tschopp was hired as a water operator trainee and quickly worked his way up to certified operator. (P1000 variable-frequency drives from Yaskawa America)

In any sport or business, rookie recognition signifies a newcomer achieving great things and destined to do even more down the road.

That concept applies in water treatment, and Corry Tschopp of Tower City (Pennsylvania) Borough Authority is a living example. He was recognized as 2023's Rookie Operator of the Year by the Pennsylvania Rural Water Association.

The annual award recognizes a recently certified operator who shows exceptional effort and dedication on the job. Tschopp has been with the authority, and in the water treatment industry, since February 2019.

"I have watched many rookies," said Wendy Malehorn, head of training and education development, during the PRWA award ceremony last March. "Some have decided that when the going gets tough, they are D-O-N-E done and they start looking for higher ground. However, as a rookie, Corry Tschopp decided to roll up his sleeves, get a bit dirty and embrace the good, the bad and the ugly."

AN ACCIDENTAL CAREER

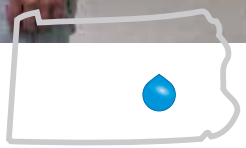
For Tschopp, winning the award was only slightly more surprising than having a water treatment career in the first place. "It never was a career choice I had in mind," he says. "I was actually working a desk job in insurance and I just got sick of the repetitive behavior every day, all day, sitting there nine to five.

> "As a rookie, Corry Tschopp decided to roll up his sleeves, get a bit dirty and embrace the good, the bad and the ugly."
> **WENDY MALEHORN**

"Then I saw an ad that said the Tower City Borough Authority was hiring for their water treatment plant. I took a shot in the dark, applied for it, got an interview and took the job."

When interviewing Tschopp, authority staff made clear that water treatment in a small town like Tower City (population 1,400) was anything but nine to five.

Tschopp recalls, "All the bad things were brought up during that interview: being available 24/7 for emergencies, dealing with middle-of-the-night winter calls. It was scary to think about jumping in. But I took the job, fell in love with it and have never looked back."



Corry Tschopp, Tower City (Pennsylvania) Borough Authority

POSITION:
Certified water operator

EXPERIENCE:
4 years

EDUCATION:
Attended East Stroudsburg University August 2013 to December 2014

CERTIFICATIONS:
Class C, E; subclasses 7, 8, 12. Has operator-in-training in subclasses 1, 2, 6.

GOALS:
"My goals are to continue working in water treatment, expand my knowledge and experience and obtain a management position."

LOCAL ROOTS

It's a 12-minute westward drive down US 209-N from Tower City to Wiconisco (population 1,160), where Tschopp grew up. "I was just a typical boy who played all the sports but never really got into handy work," Tschopp says.

He graduated from Williams Valley Senior High School in nearby Williamstown in 2013 and then attended East Stroudsburg University from August 2013 to December 2014.

"I've had kind of a wild career path, I guess," says Tschopp. "I went to college to be a physical therapist assistant. But in my second year I withdrew from college when I had my son and needed to be present as a father. I had a couple of jobs and then the insurance job, and that led me here."

RISING TO CHALLENGES

Tschopp was hired as a water operator trainee with the goal to become a certified operator in two years. "I was all for it, even though I basically did all the no-fun stuff," he says. With a small plant producing only 175,000 to 185,000 gpd, the authority only had Tschopp, full-time manager Kyle Mahoney who was the licensed plant operator, older part-timer George Hand who took care of maintenance, and secretary Chrystal Rhen.

"So I just did odds and ends," Tschopp says. "I would scrape old paint off buildings, take apart old meters and do new meter installs. The manager also showed me how to test our chlorine and zinc levels and how to keep an eye on the four deep wells that provide our water."

Corry Tschopp received the 2023 Rookie Operator of the Year award from the Pennsylvania Rural Water Association.

Tschopp calibrates the chlorine analyzer at Well 3 (Wallace & Tiernan DEPOLOX 5 analyzer from Evoqua Water Technologies, part of Xylem).

Four months into the job, Mahoney left. "This meant I was the only person who knew how to do the daily rounds at our four well sites," Tschopp says. He responded by stepping in to fill the gap, eventually earning his water operator certification: "Looking back, that crisis helped me tremendously because I had to basically pull my pants up, strap my belt, and get to it."

To meet its legal requirements, the authority hired certified operator Andrew Mione to replace Mahoney. "He's probably been the biggest mentor for me," Tschopp says. "He encourages me a lot, makes me feel like I'm always doing a good job and trusts what I do.

"He also pushed me to go for my certification before my first year was up. So I took a 12-week class with PRWA and it just snowballed from there. My career got pushed further along very quickly, which I appreciate."

LIFE ON THE JOB

The Authority's four deep groundwater wells feed two stainless steel storage tanks. "One is a 500,000-gallon tank, and the other is a 350,000-gallon tank that we just put up," says Tschopp. "We're rated to output up to 250,000 gpd to serve about 1,200 connections."

Because the groundwater is reasonably clean, the authority only needs three steps to prepare it for distribution. "We use liquid sodium hypochlorite for disinfection, caustic soda for pH control and then zinc orthophosphate for corrosion control," Tschopp says.

"We use LMI and Walchem chemical pumps (Iwaki), Wallace & Tiernan DEPOLOX 5 chlorine and pH analyzers (Evoqua Water Technologies, part of Xylem), and a Hach Pocket II colorimeter for zinc testing. We also employ the 4-log removal process to remove 99.99% of bacteria in the groundwater."

As for the wells and their Grundfos and Burks pumps (Crane Pumps & Systems), "We only have one well being pumped directly into our treatment system," says Tschopp. "Two other wells feed our tanks for storage, and the fourth well output is pumped into a clearwell. We also have Sentinel dialer alarms (Sensaphone) connected to our four SCADA panels to trigger alarms from the well sites for various settings."

> "It was scary to think about jumping in. But I took the job, fell in love with it and have never looked back."
> **CORRY TSCHOPP**

OTHER CHALLENGES

Getting up to speed fast isn't the only challenge Tschopp has faced in his short career. "Two years in, we had a major leak that we couldn't find," he says. "Everywhere we looked, we couldn't find it. We were working Sundays, 12-hour days, just trying to find that leak. We were digging holes after holes after holes. Meanwhile the town depleted our water supply in the middle of a drought, and we were hanging on by a thread."

Two weeks on, authority staff, with the aid of PRWA personnel, finally

FAMILY TIME

When not at work, Corry Tschopp likes to spend time with his long-term girlfriend Hannah Powers and his 8-year-old son Eli.

"She's been my rock through all this, being there for me through all the hard times," he says. "Add in my son and they're the reason I do what I do. We also have two dogs that we take for long walks. But just spending time with my family at home is what matters to me most."

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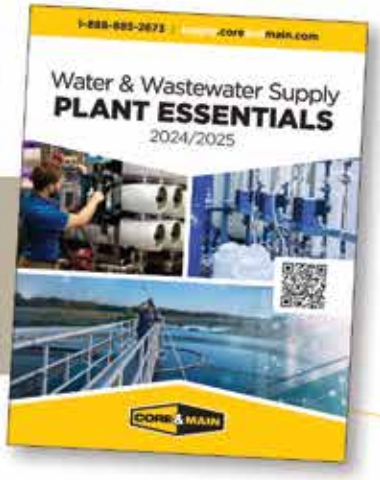

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> “Two years in, we had a major leak that we couldn’t find. Everywhere we looked, we couldn’t find it.”
> **CORRY TSCHOPP**

found the leak and fixed it. Ironically, they found it under the city’s main street after digging two holes. “But that pipe leak seemed so minor that we thought the problem must be somewhere else,” says Tschopp.

After digging around a swamp that the main waterline goes through, the authority repair crew went back to the first leak, only to discover that it had grown to “a three-quarter circle split on the line,” Tschopp says.

“So we fixed that, and that fixed the problem. It was then we learned to fix the little leaks fast because they can grow into big leaks. We weren’t losing that much water initially, and then it drained us over a three-day stretch.”

The Tower City Borough Authority draws from four deep groundwater wells. The system is rated to produce 250,000 gpd to serve about 1,200 connections.

The next big challenge he has faced is dealing with customers who were vocally angry about the lack of water in their taps. “Obviously social media’s awful, but I live where I work, which also doesn’t help,” says Tschopp.

“There are some not-so-pleasant people out there, and you read stuff that makes it seem like you’re doing an awful job. People don’t care where their water comes from until they don’t have it. So it’s frustrating. You just wish they would walk a couple days in your shoes to see how it is to troubleshoot problems like these.”

LOOKING AHEAD

Despite the twists and turns of his career, Tschopp loves his work. As for the future, “I get asked that a lot, but truth be told, I don’t really know.”

“I always want to be in the industry, but it’s hard to say where I want to go with it. I feel like there are always more places to go and see. I’m treated very well here, but I would be lying if I didn’t say I’d love to go into the massive filter plants and see how some of that stuff works.” **tpo**

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A Long Way From Milking Cows

MIKE ZIEGLER STARTED OUT IN THE DAIRY INDUSTRY. LIFE HAD DIFFERENT PLANS. HE'S NOW AN AWARD-WINNING WATER TREATMENT PLANT OPERATOR.

STORY: **James Careless** | PHOTOGRAPHY: **Bradley Leeb**

From the time he graduated high school until 1996, Mike Ziegler was a dairy farmer in Beecher City, Illinois.

"Then we had a herd dispersal with all of the cattle being sold off," he says. "So, I answered an ad for a part-time job at the Effingham Water Treatment Plant, just 15 miles down the road."

Ziegler has stayed with that plant ever since that time, earning his Class A Water Operator certification (surface water lime softening) and rising to become the facility's lead operator. In that post, he supervises Effingham's water system and the distribution of water to five contract customers.

Ziegler is good at his job, which is why the Illinois Potable Water Supply Operators Association named him as 2022 Surface Water Operator of the Year. "It's great to be recognized by your peers," says Ziegler. "But this award belongs to everyone I work with on water quality at the city of Effingham."

Mike Ziegler, lead water operator at the Effingham Water Treatment Plant, visits the dam near the plant's water source.

FARM LIFE INTERRUPTED

Ziegler, born on June 13, 1963, He grew up near Shumway, Illinois, and went to Beecher City Community High School. His parents owned a small dairy farm and raised seven children; Mike was the only boy.

"After I graduated in 1981, I went straight into dairy farming," he says. If the herd he tended hadn't been sold, he might still be a dairy farmer. But with the herd and his job gone, he started looking around.

"From everything I read I knew the water field was a very progressive industry and I thought it was an honorable profession," he says. "I had a wife and two kids who I was responsible for, and I was closing out a previous career of being a dairyman for 15 years that I really loved. So, if I was ever going to do something else, this was the time to do it. So I did."

A BIG CHANGE

Moving from dairy farming to drinking water treatment was a dramatic life change. Compared to tending cattle during daylight hours, working at the Effingham plant was completely different: "I started on nights from 11 p.m. to 7 a.m. at and worked every weekend. That continued after I got hired full-time, for 10 years."

During that time, Ziegler hit the books, earning his Class A certification when not working the graveyard shift. "A big thank you goes to the people I worked with at the start for encouraging me to study and get my license, and for helping me see that water management

OFF THE JOB

When not keeping Effingham's drinking water clean, Mike Ziegler spends his time with his wife Anita, his two grown children and their families. Son Garrett and his wife Allie have two sons, Augie and Harry. Daughter Grace and her husband Alex Steppe have a daughter, Elle.

"I've been very involved following my children in all their endeavors," he says. "I helped coach high school baseball for eight years; I gave that up last fall. And I'm pretty involved with my church. When you get into your kids, your job, your church and your community, the years just fly by. But they were wonderful. And after I retire, we'll see what happens."

Mike Ziegler, Effingham (Illinois) Water Treatment Plant

POSITION:
Lead Water Operator

EXPERIENCE:
27 years in the industry

CERTIFICATION:
Class A Water Operator

GOAL:
Retire at age 62

"It's great to be recognized by your peers. But this award belongs to everyone I work with on water quality."
MIKE ZIEGLER

Ziegler, shown with an instrument bank that includes a Hach CL17 chlorine analyzer, leads a team at a conventional water plant built in 1988 and upgraded several times.

could be a rewarding career," he says. "They pushed me, which helped me become lead operator in 2010."

As lead operator, Ziegler manages the Effingham system with its 4,600 customer connections, 120 miles of water mains, and more than 1,000 fire hydrants. The plant has a treatment capacity of 6 mgd, but generally processes about 1.6 mgd to serve the city's 5,300 users and the five customer communities.

CONVENTIONAL PROCESS

"We are a Class A surface water plant," Ziegler says. "It is your standard coagulation, disinfection, sedimentation and filtration plant. It was built in 1988, although we've had many upgrades since then."

Lake Sara is the main source of water, supplemented by the Little Wabash and Kaskaskia rivers. Created by the Effingham Water Authority in the 1950s as a dammed reservoir, 800-acre Lake Sara has become a key recreational and wildlife area. The lake is named for Sara Pearson, a local philanthropist, and is carefully tended by the EWA and the Friends of Lake Sara nonprofit conservation group.

"Probably 99.8% of our water comes from Lake Sara," says Ziegler. "It is gravity fed through a 16-inch pipeline from the dam to a 19-acre treatment reservoir that we call CIPS Lake. The reservoir was built by Central Illinois Public Service when it owned the Effingham water system.

"We also use pumps and pipelines to bring water from the rivers into that same basin. The Little Wabash pumps are older Allis-Chalmers pumps (Flygt - a Xylem Brand) that continue to perform reliably. The Kaskaskia pumps are Pentair turbine pumps. We have a pumping station with Aurora pumps (Pentair) centrifugal split-case pumps that send water from CIPS Lake directly into our treatment plant."

> "Just like in your home life, it's a case of wants versus needs and trying to give consumers the best possible product at the lowest price."
>
> **MIKE ZIEGLER**

Before the water comes into the plant, it is treated with powdered activated carbon injected into the raw water main using a MERRICK silo system. "Next, the water comes up into our head tank, where the coagulants and a high-density lime slurry (MERRICK system) are added," Ziegler says. "Then it is diverted off into two 100,000-gallon ClariCone clarifiers (McDermott) where we raise the alkalinity so the sedimentation drops."

After that, the water comes out of the weirs to a dropbox and into a pipe where it is hit with a low dose of chlorine and polyphosphate. Then it goes through a carbonation vessel where CO_2 is added to drop the pH. It is then diverted to four D-cell filters with a foot of anthracite and 3 feet of sand, and then dosed with chlorine, ammonium sulfate and fluoride before being released to a pair of 1 million-gallon clear wells before distribution."

Ziegler checks the carbon feed silo system (MERRICK) at the water plant, which has a treatment capacity of 6 mgd and an average output of 1.6 mgd.

As Mike Ziegler looks toward retirement, he intends to make the transition to his successor as smooth as possible (ClariCone clarifier from McDermott).

The Sludge BEAST Puts the EQ in Grade A

Debris Removed By The Sludge BEAST

The team at the Effingham Water Treatment Plant includes, from left, Tony Althoff and Patrick Brown, maintenance personnel; and Mike Ziegler, lead water operator.

TEAM EFFORT

When he talks about the treatment process, Ziegler always credits the team that manages it: Class A operators Bob Rhodes and Derrick Helmbacher, and maintenance personnel Tony Althoff and Pat Brown.

"This team has all been with me since 2017," says Ziegler. "It's been a big change when people came and went from the water plant as a means of getting a job and then going elsewhere whenever there was another opening in public works."

Ziegler notes that a great office staff (Janet Ohnesorge, Emily Bonner and Abby Nosbisch) and the outside water distribution team (Brent Stortzum, Russ Leppin, Jared Westjohn, Clark Bigard and Nate Reisner) also deserve credit for helping the Effingham plant keep up with the challenges of the job.

One such challenge is keeping up with regulations. "There's always a cost/benefit analysis to everything," Ziegler notes, "Just like in your home life, it's a case of wants versus needs and trying to give consumers the best possible product at the lowest price."

At the same time, the cost of everything the plant needs keeps going up. "We've taken 25-30% hits on chemical costs over the last three years," says Ziegler. "Utility costs are up 40%, and that's after going out for bids. We've also spent a lot of time filling in service line material survey questionnaires. It's a lot to add to the job."

Ziegler notes that the first purpose of the Lead Service Line Replacement and Notification Act is to require community water systems to develop, implement and maintain a comprehensive water service line material inventory and replacement plan. An accurate inventory enables communities to set priorities and strategies for lead service line replacement in their systems.

READY FOR THE NEXT STEP

Having a decade and a half in the dairy industry and 27 more in water treatment, Ziegler can't be blamed for looking ahead to retirement. As that day approaches, he is doing whatever he can "to make the transition for whoever runs with it next as seamless as possible."

"My goal is to be able to retire when I'm 62, so that's two more years. As for what comes after that: "I don't know yet. My life has always been in phases. I always said that at least I was lucky enough to survive my young-and-dumb stage!" tpo

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WASTEWATER

By Rick Lallish

Anhydrous or quicklime is great for pH-adjusting and coagulating solids. What must be done before it can be used?

A. It has to be properly mixed with a polymeric flocculant.
B. It must be slaked (mixed with water).
C. It has to be stored under a heating source if the temperature falls below 30 degrees F.
D. It has to be agglomerated with a mixing compound.

ANSWER: B. Quicklime is an excellent chemical for solids coagulation and pH adjustment. It is relatively inexpensive and easy to use. The main disadvantage is that it is difficult to store since it absorbs moisture and cakes solid. It also must be slaked (mixed into a slurry with water) before use. Upon use, you must take precautions as the slurry will heat and may reach boiling temperature quickly. Lime is also very irritating to the skin, eyes, lungs and mucous membranes, so proper PPE is recommended. More information may be found in the OWP, CSU-Sacramento textbook: *Advanced Waste Treatment* (Fifth Edition), Chapter 4.

DRINKING WATER

By Drew Hoelscher

How does a venturi meter measure flow?

A. The velocity of water causes a propeller or turbine to rotate.
B. Uses the voltage created between two electrodes as the water passes through.
C. Measures the difference in pressure from two separate points.
D. An electronic transducer measures the velocity of a sound wave and translates to flow volume.

ANSWER: C. The venturi meter is a pressure-differential meter consisting of a converging cone, throat and diverging cone. The water flows faster as it exits the converging cone and enters the throat. The faster-moving water has a lower pressure than the slower-moving water upstream of the converging cone. The difference in pressure at these two points is translated into a volume of flow.

ABOUT THE AUTHORS

Rick Lallish is water pollution control program director and Drew Hoelscher is program director of drinking water operations at the Environmental Resources Training Center of Southern Illinois University Edwardsville. tpo

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Balancing Act

SALTWATER INTRUSION IS A FACT OF LIFE ON ALABAMA'S DAUPHIN ISLAND. BLENDING OF WATER FROM DIFFERENT WELLS IS THE KEY TO SUITABLE QUALITY SOURCE WATER.

By Steve Lund

Producing good water is a balancing act on Alabama's Dauphin Island.

The barrier island a few miles off the state's coast in the Gulf of Mexico has several wells, but they are all brackish, and the deepest and most productive well is the saltiest one. The water from that well has to be blended with water from wells in other aquifers to reduce the salt content of the raw water going to the treatment plant.

"If you take our deepest well, which the other day when I checked was 1,944 ppm of chloride, but then you add in one or two of the smaller wells that have 600-700 ppm chloride, we end up with 1,200 and 1,500 ppm chloride raw source water," says Vaile Feemster, general manager of the Dauphin Island Water and Sewer Authority.

The trick to the blending is to draw enough from the less salty wells to achieve a good blend, but not to draw too much, because then the aquifer would become saltier.

"What we've had since day one is saltwater intrusion," says Feemster. "Dauphin Island sits far enough in the Gulf that the aquifers that come this way are in a transition zone. We draw out of those aquifers, and all of them are brackish. For us, managing those aquifers is the most important thing."

The main room inside the Dauphin Island reverse osmosis water treatment plant stays at 76 degrees without climate control.

RO REMOVES SALT

The water is treated with reverse osmosis, which Feemster says does an excellent job of removing both salt and iron, which is also present in high levels in the well water.

Dauphin Island had the first municipal RO plant in Alabama. That plant (Osmonics) still operates on one dedicated well, but it only produces about 120 gpm. The rest of the island's water used to come from a freshwater aquifer about 35 feet deep that is recharged by rainwater. That water was treated at a 1,400 gpm plant that provided aeration, flocculation, clarification and filtration.

The shallow freshwater aquifer had limited capacity and was also vulnerable to saltwater intrusion from over-pumping and storms. "It just wasn't a sustainable supply," Feemster says.

In 2009, the authority invested in a new treatment plant and a new well drawing from a deeper and saltier aquifer. The new plant (Lane Christensen) was built on the site of the old one and was certified LEED Silver, with no-irrigation landscaping, a reflective roof and low heating and cooling costs.

The main room of the plant, which houses all the RO equipment, stays at 76 degrees all year with no heating or air conditioning, thanks to the heavily insulated roof and the water flowing through the plant at 74-77 degrees. The building was designed to provide a healthy interior environment for the staff, to serve as a community resource, to reduce stormwater effects and to be energy efficient.

ROTATING THE WELLS

The RO process, however, is relatively energy-intensive. The pressure applied to the raw water side of the membrane increases as the concentration of dissolved solids increases, and that increase in pressure requires more power.

To conserve power, it would be better to keep the raw water salt concentration lower, but that would mean drawing more water from the shallower wells. Ultimately that could lead to those wells becoming saltier.

That's the balancing act: Drawing the right amount of water from each well to produce raw water that can be treated efficiently by RO, without drawing too much from any one well.

"We are currently in three aquifers and are able to rotate and manage the wells to keep the chlorides from increasing to where the water can't be treated with our current technology," Feemster says.

"Every year RO gets more and more efficient. They're advancing membranes every year. But we start out with such high brackish water. The higher the chlorides coming in, the higher the net pressure to remove those chlorides. We start out with a terrible water source and we're able to turn that into a very good drinking water." The facility uses Toray membranes.

POST-RO TREATMENT

After RO, there are still a few steps to produce

The certified LEED Silver water treatment building on Dauphin Island is landscaped to minimize stormwater effects and the need for irrigation.

finished water. "We add post-treatment chemicals with aeration," Feemster says. "RO strips everything except gases. We add lime back in to get us some alkalinity and get the pH up. And we disinfect and add a phosphate, like most treatment facilities. After RO it's really no different from what anybody would do pumping from a well."

RO produces a waste stream: About 25% of the raw water does not pass through the membrane. That reject water has an elevated concentration of dissolved solids but is not a disposal problem because the waste stream can be discharged to brackish water that is even higher in solids.

Dauphin Island has a resident population of about 1,600 but it has about 2,300 homes, many of them seasonal rentals. Water demand rises significantly in summer, from a winter average of 500,000 gpd to about 750,000 gpd in the peak season.

When the utility built the new water plant, it added a 1 million-gallon ground storage tank. Emergency power generators were also added because the island is vulnerable to hurricanes that can cause lengthy power outages.

It's not the easiest place to operate a water treatment plant. When the tourists come, demand goes up, and juggling the brackish water sources becomes a little trickier. "Fortunately, for the last 10 years, we've been able to keep those levels manageable," Feemster says. "And that's always our goal." **tpo**

> "We are currently in three aquifers and are able to rotate and manage the wells to keep the chlorides from increasing to where the water can't be treated with our current technology."
> **VAILE FEEMSTER**

Drying Differently

A DRYER USING ELECTRO-OSMOSIS HELPS A KENTUCKY CLEAN-WATER PLANT REDUCE BIOSOLIDS WEIGHT AND VOLUME AND SAVE ON HAULING AND LANDFILL COSTS

By Scottie Dayton

Josh Thompson had a massive challenge.

Within 60 days — the end of October 2022 — the landfill would reduce the volume of biosolids accepted from the North Wastewater Treatment Plant by 700 wet tons per month. The facility in Henderson, Kentucky, produced 19,000 wet tons annually.

"We had spent most of 2022 investigating alternative dewatering systems to replace our two 30-year-old, 2.5-meter belt filter presses," says Thompson, treatment superintendent with Henderson Water Utility.

"After testing three different screw presses, we had selected one and believed there was time to complete a large capital project. The 60-day deadline stopped that idea." Instead, the utility chose an innovative second-stage dehydrator. It yields biosolids at 40-45% solids, significantly reducing the weight and volume of material going to landfill.

PHOTO COURTESY OF ELODE USA

The ELODE electro-osmosis dehydrator complements the North Wastewater Treatment Plant's two filter belt presses, reducing cake weight by 67%.

EXPLORING OPTIONS

Henderson's activated sludge plant (15 mgd design, 6 to 7 mgd average, 25.5 mgd peak flow from combined sewers) treats wastewater in two extended aeration basins. UV-disinfected effluent is discharged to the Ohio River.

While looking for a new landfill site, management planned to use multiple geotextile bags to dewater and store biosolids on site, and to offload press-dewatered material to a lined field covered with tarps. "We were grasping at straws to find a viable solution," says Thompson.

In October 2022, senior utility staff and a consulting engineer spoke to ELODE USA representatives. "They had a second-stage biosolids dryer that used electro-osmosis to reduce cake weight by 50% or more," says Thompson. "We immediately set up a pilot test for that month."

In three minutes, the 1-meter dehydrator dewatered wet biosolids at 14-16% solids to 45% solids, reducing cake weight by 67%. Based on that result, the utility made an emergency purchase of a 3-meter EODS-3000 dehydrator, the first 3-meter ELODE unit in the nation and the third globally.

Unfortunately, it didn't arrive from the South Korean manufacturer in time, and the biosolids kept coming. "For a utility our size, we produce a lot of them," says Thompson. "Our largest industrial user is a paper mill."

PLANT PREPARATIONS

With the dehydrator on a ship bound for California, Thompson called the landfill owner to ask for a deadline extension. Instead, the situation worsened. After another 60 days, the landfill would not accept wet biosolids from any wastewater treatment plant. Years of doing so had destabilized the site, and heavy equipment was sinking.

"Even ELODE biosolids were considered too wet, and we had until Jan. 1, 2023, to figure out what to do," says Thompson. "Then, the week before Christmas, we secured a different landfill for both plants and could breathe again." (The other facility, the Forrest E. Stokes Wastewater Treatment Plant, treats an average of 2.57 mgd.)

The 10-by-15-foot, 8-foot-high dehydrator was scheduled to arrive before contractors could build a proper structure to house it. So Thompson eyed the plant's 60-by-100-foot open-sided biosolids warehouse. ELODE USA president Alex Min and his staff supervised the machine's installation in May 2023.

"The warehouse's 14-foot-high ceiling stressed the tow truck driver as we figured out how to lift the 9.5-ton machine from the crate with the jib crane and set it in position," says Thompson.

> "It really does reduce our solids by 60% in three minutes. This technology could be a game-changer for our industry."
> **JOSH THOMPSON**

Contractors then built a 30-by-50-foot enclosure around the unit but didn't have time to include conveyance from the stockpiled biosolids to the 13-foot-high hopper.

Training for the operators involved learning the control panel and how changing the settings affected the process. "We adjusted the speed of the belt, the amount of power going to it, and the amperage until we found the sweet spot for our solids," says Thompson. "Then we did the same thing with the speed of the feed conveyors to ensure the cake was distributed evenly going into the dehydrator."

HOW IT WORKS

In daily operation, a CASE 621D end loader fills a day hopper with cake, which a conveyor feeds between the dehydrator's center drum (anode) and belt. The inside of the drum is coated to ensure a consistent and proper positive electrical flow. A chain (cathode) on the back of the belt carries the negative charge.

When current is applied, the voltage causes the negative-charged biosolids particles to migrate to the positive anode (drum) and drives the positive-charged water onto the belt. The manufacturer says electro-osmosis uses one-fourth the energy of thermal dryers.

"We're seeing 35-37% solids leave the machine, but as the material continues to steam off, it reaches 40-45% solids by the time it arrives at the dump container," says Thompson. "The unit runs nonstop, filling a 40-yard roll-off in about 36 hours, so we're constantly sending loads to the landfill."

Electro-osmosis generates heat, and the temperature inside the machine is 180 degrees F. The dehydrator has a fan in both 12-inch exhaust ports, and piping vents the heated air to the building exterior.

"The system removes a large portion of the heat and nearly all the humidity," says Thompson. "We also mounted four 36-inch air-mover fans on the walls and leave the ceiling vents open." In summer, the building temperature averages 95 degrees F.

Josh Thompson, treatment superintendent in Henderson, Kentucky, at the control panel on the 3-meter EODS-3000 dehydrator.

PHOTO COURTESY OF JOSH THOMPSON

FINE-TUNING

While everyone was pleased at how well the unit ran, there were growing pains. "Alex and his staff have worked tirelessly to resolve any issues," says Thompson.

Originally, the open screw conveyor discharged dried solids into a truck, but the conveyor's 30-degree pitch caused the screw to clog. Switching to containers made it possible to lower the pitch to 20 degrees, fixing the problem.

It was no surprise that some small components loosened during the ocean voyage and cross-country road trip. "We're not certain, but a month after installation we suspect a bolt fell out, creating a short between the drum and the chain," says Thompson. "The short threw sparks and welded the object to slag. We could only guess at what it was."

Some other metal contamination has occurred when the end loader scoops up biosolids for transport. "Items as small as a dime or a nail can cause shorting and burn holes in the belts," says Thompson. "The loader also picks up occasional stones, and they poke holes as well." To address that issue the utility is considering installing a metal detector."

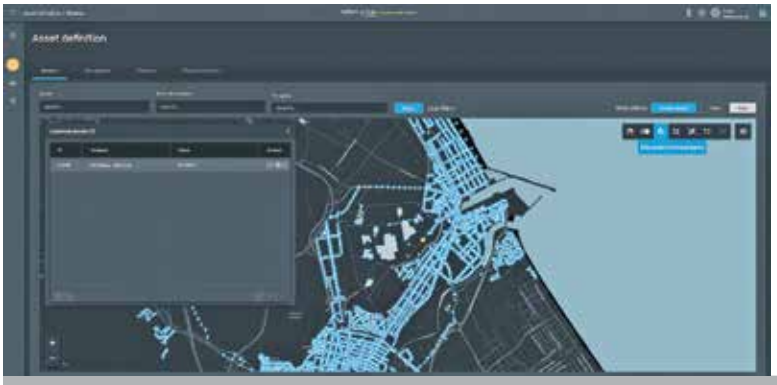
CONCLUSION

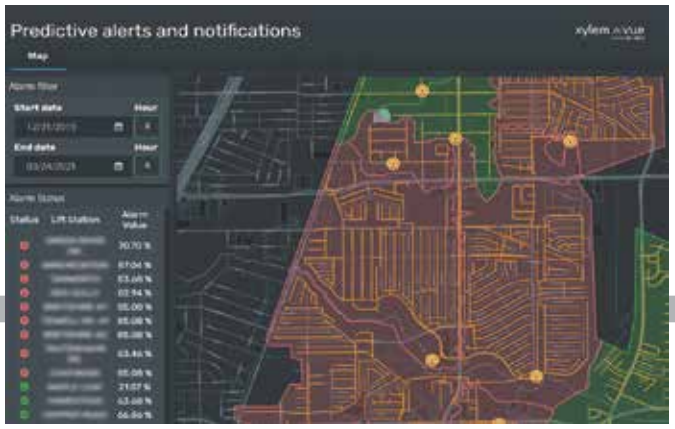
The 3-meter dehydrator is the largest unit available, yet at maximum capacity it processes only 40% of the plant's biosolids. Therefore, the utility is considering a second unit.

As of last October, the dehydrator had run nonstop for two months; not long enough to establish hard numbers on long-term hauling and landfill costs. However, after accounting for the dehydrator's power consumption, the utility expects to see net operational savings of about $11,000 per month.

"The savings figure was higher originally, but the new landfill has a considerably lower tipping fee, meaning return on investment is longer than expected," says Thompson.

Thompson was initially skeptical of the technology but has found it sound. "The advertising claim is true. It really does reduce our solids by 60% in three minutes. This technology could be a game-changer for our industry." tpo





1) Xylem Vue powered by GoAigua enables users to integrate and standardize asset data from across the entire network into a single unified platform.

2) Real-time monitoring of network balance and flow data helps improve wastewater network performance.

3) Applied digital twin hydraulic modeling and risk-based analytics help utilities predict sanitary sewer overflows and prioritize facility maintenance.

Single Source of Truth

AN INTEGRATED DATA MANAGEMENT SYSTEM CAN HELP UTILITIES MAXIMIZE INVESTMENTS, SOLVE PROBLEMS, AND TREAT AND DELIVER WATER MORE EFFECTIVELY AND AFFORDABLY

By Ted J. Rulseh

Data silos can be a drag on efficiency and performance for clean-water and drinking water authorities.

Traditionally, integrating essential information from multiple sources has been a headache, requiring manual data entry and the juggling of multiple systems. That carries the risk of errors and lost productivity, not to mention potential permit and regulatory violations.

Now comes Xylem Vue powered by GoAigua, a platform designed to help utilities integrate and manage data from previously unconnected sources and gain a complete, unified view of a water and wastewater network.

Xylem leaders say this single software and analytics platform, built by utilities for utilities, can propel users to new levels of digital transformation, getting more return on investment, quickly spotting and solving problems, boosting efficiency and delivering cost-effective services. The company says it can help users reduce nonrevenue water, save money, extend asset life, improve operations and planning and more.

The platform integrates and standardizes data across the organization, from sensors, SCADA, process equipment, business systems and others, into a single information source. Users gain 360-degree operational intelligence to enable optimal performance and efficiency.

The platform is vendor-agnostic, which means users can capture data from any source, including those not supplied by Xylem. Richard Loeffler, senior practice solution architect with Xylem, talked about the technology in an interview with *Treatment Plant Operator.*

tpo: What was the reason for bringing this technology to the marketplace?

Loeffler: The technology is designed to help utilities solve a common problem: disconnected systems that impede access to the information and systems people need to do their jobs. Many utilities have disparate systems, and not every department always has universal access to data. So it's easier for operators, managers and others to get the information they need, when they need it, when siloed databases are brought together.

> "The platform is being used by more than 400 municipalities. It is battle-tested."
> **RICHARD LOEFFLER**

tpo: What differentiates this platform from other offerings with a similar purpose?

Loeffler: For one thing, it was designed by a water utility to be used by water operators. It was originally created by a contract operations company. They needed an information system flexible enough to work across all the water utilities they managed. The platform is used by more than 400 municipalities, and it has added functionality while being leveraged by those organizations. It is battle-tested. A combination of water industry focus, operational knowledge and software development excellence make our platform different.

tpo: How does the platform unify information from various sources?

Loeffler: The platform and the applications within it serve as the glue between all the assets a utility has invested in. Operators receive information in a holistic way, instead of having various standalone applications. Traditionally, a utility might have one system for information about the treatment works, another for the lift stations, another for viewing asset information. Now instead, all that data can be pulled together into one unified view.

tpo: How does the platform figure in the daily life of operators?

Loeffler: Instead of having to worry about a series of browser tabs and windows, operators can go to a single source of truth that provides the information from all the utility's subsystems. The platform also gives operators a version of futureproofing because, as it evolves, it provides new functionality, features and capabilities. Operators can log into one system and have access to all the screens, visualizations and data they need to step through their day.

> "It's exciting to watch what happens when people gain access to information they didn't have before, served up in a way that's interactive and visually compelling."
> **RICHARD LOEFFLER**

tpo: What is involved in deploying this technology for a given utility?

Loeffler: The first step is to understand the utility's current state. Every utility does things slightly differently. It's important that we see what the current state looks like from operational, procedural and IT/technology perspectives. We inventory the subsystems, applications and assets the operators interact with to determine how we can connect that data into our platform. Xylem Vue supports more than 120 industrial protocols and systems.

tpo: What happens after that initial step?

Loeffler: We develop a plan to integrate the data using various cybersecure and approved methods for data transfer. We help guide the utility as to the art of the possible. We help determine what layout, screens and visualizations make the most sense for them. The platform is flexible enough to be designed with a look and feel to closely match any utility's requirements.

tpo: Can the platform help utilities that don't want or need complete data integration?

Loeffler: Many utilities come to us to solve a specific complex problem. Xylem Vue powered by GoAigua can start there and build on later. It doesn't have to integrate every piece of data. They can start small and expand over time, or choose not to expand and keep just one system or application running. There is a great deal of flexibility in how the system can provide value. It can grow and flex along with the utility and its IT environment.

tpo: How easy is this platform for operators to learn and use?

Loeffler: It's designed to be as intuitive as any other system a utility person already interacts with. Even after it's deployed, operators who deal regularly with a specific system or workflow can design a dashboard or an analytical screen to serve up data for their purposes. As part of any implementation we do in-person training, and over time we provide brush-up training and 24/7 technical support.

tpo: How would you characterize the way utility personnel benefit from the platform?

Loeffler: It's exciting to watch what happens when people gain access to information they didn't have before, served up in a way that's interactive and visually compelling. When that happens they will self-discover new capabilities.

tpo: Can you provide an example of how this happens?

Loeffler: We worked with a treatment facility where the operators had little access to what was going on inside the collection system. Suddenly they had one place where they could see all that information combined into one simple overview. It was a lot of fun watching the operators work together and discover how they might use the data to benefit treatment operations.

tpo: How did they put that collection system data to work to benefit the plant?

Loeffler: Now instead of just dealing with whatever flow shows up in the headworks, they can see an hour or two ahead of time when an area in the collection system is having elevated flows. So they can anticipate those flows and adjust the operational scheme to keep the plant operating at a consistent flow rate. That's good for the process, for effluent quality and for the mechanical equipment in the plant.

tpo: Are there kinds or sizes of facilities this offering is best suited for?

Loeffler: The platform is highly flexible in its capacity to ingest data and present useful information and insight. So any size utility can use it to obtain high-quality data and provide valuable information to the operating teams. tpo

Becoming a Water Woman

A MID-LIFE CAREER CHANGE SAW DONNA GRUDIER BECOME A TREATMENT PLANT OPERATOR. NOW SHE RUNS A PLANT AND ADVOCATES FOR OTHER WOMEN TO DISCOVER A REWARDING PROFESSION.

By Suzan Chin-Taylor

Wastewater remains a traditionally male field, but women have joined the ranks through various avenues. There are as many different "how I got here" stories as there are women to tell them.

Women in wastewater are just as likely to love their jobs as men. And because the field isn't crowded with women, there are many opportunities for them to move up the career ladder. As in many fields where women are underrepresented, female operators often reach back to help those coming after them.

Donna Grudier is one such woman. She has helped pave the way with her mentorship and her own significant achievement. A bit late to the game, Grudier entered the profession in a midlife career change but quickly made up for lost time.

Through a can-do attitude, working through challenges and a knack for management and organization, she quickly excelled in her field. She is now president of the New York Water Environment Association and senior operator at the Village of Northport Wastewater Treatment Plant. She talked about her career in an interview with *Treatment Plant Operator.*

tpo: How did you get your start in the wastewater industry?

Grudier: I was working for Northport as deputy clerk in accounts payable. I wasn't really thrilled with the job. One of the plant people left, and soon after I was chatting with Erica Reinhard, the senior operator. She said I should take his place. I thought she was out of her mind. She asked me to take a tour. It wasn't what I expected; not a filthy job. But I was worried how it would look: Do I really want to be a laborer at a sewer plant at 43 years old? But the money was so good. I felt like I had to try it. So I dove in.

tpo: You started as a laborer. How did you work your way up the rungs?

Grudier: We're a very small plant. There are only four of us here, and the woman who asked me to tour the plant Erica told me, "You'll run this place someday." It takes a particular kind of person to be in charge of things; one who's comfortable managing people and paperwork, dealing with the village leadership.

tpo: How did you get involved with NYWEA?

Grudier: My stepdad introduced me to NYWEA at their annual meeting. It's a phenomenal show, with vendors, engineering firms and operators, just a wonderful place to network and learn. I thought, 'My goodness, this takes what we do and makes it exciting!' There I met Tom Pfersching, a member of our Long Island chapter who said, "You should join our Operations and Maintenance Committee." I moved up to secretary and then chairperson.

tpo: How did you rise through the officer ranks within NYWEA?

Grudier: I was in charge of operator training, the O&M Committee's primary focus. Then I got very involved with the Operations Challenge at my first spring meeting, and it just blew me away. So I helped our local team, the Brown Tide, as project coordinator. Then our operator representative to the state board of directors completed his term, I took his place for five years. Then I moved on to the state-level executive board of directors and was on a five-year track to become president. That's where I am today.

Donna Grudier

tpo: What are the benefits of being so active in the organization?

Grudier: I've made many friends and had incredible networking opportunities. Folks in this industry are the salt of the earth: warm and inviting, hardworking and dedicated. People don't think about us as water heroes, but we are. I got to meet my husband Dale through NYWEA, and I can't ask for anything more than that!

tpo: What hurdles did you encounter as a woman in the industry?

Grudier: I didn't have too many obstacles. We all deal with some "boys will be boys" nonsense. One boss loved to refer to me as Blondie. A lot of people in this industry have been around a very long time. You have to gradually guide them into thinking correctly and speaking to you properly. There's the perception of, "You're a woman. You can't be in charge. What can you possibly know?" But overall, it hasn't been bad. Being so active in NYWEA probably helped me. It doesn't matter if you're a man or a woman. When people see you are seriously committed to improving the industry, that's how you gain respect.

> "I've made many friends and had incredible networking opportunities. Folks in this industry are the salt of the earth: warm and inviting, hardworking and dedicated."
> **DONNA GRUDIER**

tpo: Is overcoming assumptions one of the biggest challenges?

Grudier: That was one of the bigger points I struggled against. Even worse than being a woman was being a woman operator and looking for respect. As an operator, you fight hard to get respect from the engineers and even the vendors. Some think we're just turning a monkey wrench all day, we don't understand things. The smart ones understand that we know probably more than they do because we work with this every day.

tpo: Tell about your experience with the United Nations program called the Water Woman Summit.

> “The industry is changing rapidly. I see more women becoming operators. I can only hope the more of us there are, the more there will be.”
> **DONNA GRUDIER**

Grudier: It was held as part of the UN’s 50th anniversary Water Summit, and it was about empowering women, trying to bring more into the industry. Quite honestly, issues with water in our world are mainly borne by women. In emerging countries, it’s the women’s job to get water. Women representing different countries talked about their jobs in water, how they were working on new infrastructure and new ideas. There were middle school children in the audience. To see a new generation excited about being environmental warriors was really neat.

tpo: You’ve described your work role as “the mom of the plant.” What do you mean?

Grudier: My job is to keep the bacteria happy. I keep them warm, safe and fed. When we’ve got some bad ones, we get rid of them to protect the good ones. We do all the things a mom does. And that’s how I’m taking care of my itty bitty, tiny kids.

tpo: What are some big misconceptions about careers for women in this industry?

Grudier: I feel the biggest misconception is that potential women operators expect that it’s a filthy, disgusting job, being in hip waders and shoveling sludge. It’s occasionally that, but usually it’s not. If I go home with a splatter on me once every six months, that’s a lot. As long as you work clean, you stay clean. And there are other ways to be part of this career: be a lab tech, work in maintenance, all kinds of things. Another misconception is that wastewater workers are unskilled or uneducated. We’re not. We have to go to school, learn microbiology and chemistry, hydraulics. It’s not something just anybody off the street can come in and do. It’s a much more enriching job than people generally understand.

tpo: What are you personally doing to promote that understanding?

Grudier: I’ve kind of just put myself out there. I bang the drum on behalf of the industry and talk about what we do, why we do it, and why it’s exciting.

tpo: What is NYWEA doing to encourage women to enter the water professions?

Grudier: NYWEA has really gotten on board with this in recent years. We have an incredible Diversity, Equity and Inclusion Committee. They have championed the InFLOW Program where high school and college students participate in our meetings. They sponsor kids from the area to work in treatment plants as a summer job in our internship programs.

tpo: What is your area of focus as NYWEA president?

Grudier: Each president gets to have a theme. Last year the president called his “The Year of the JEDI: Justice, Equity, Diversity and Inclusion.” We focused on including everyone: women, minorities. My focus for the year is bringing more operators into our fold under the theme of “Elevating Essential Workers.” I can tell you the percentage of operators who are NYWEA members is low. I reach out to them, so they can shine in the industry a little more. I am part of a committee that awards an annual Grit Scholarship. You don’t have to be an academic wunderkind. You just need to be working toward something you’ve struggled to get to.

tpo: In which areas do you feel women can make a huge impact in the industry?

Grudier: Every single one. When you have more ideas, more ways of thinking about things, you’re going to do better. Women offer different ways of thinking, can give different perspectives, and can reference different experiences. Wastewater is an industry where we have a place everywhere.

tpo: What would you tell women who might be considering wastewater as a career?

Grudier: Do it. Absolutely, do it. It’s not what you think it is. It’s going to be so much better than you ever imagined. If you jump into it with passion and excitement and care about your job, you’re going to get so much out of it.

tpo: Where do you see the biggest opportunities for women? As operators?

Grudier: Yes. There are so few of us. It’s the best chance to move yourself up the ladder, and not just for municipal. If you start out in municipal work and get all those certifications, and you find you don’t like working for government, you can take all that experience and education and go into the private sector. There are hundreds of private plants. Once you get your license and understand what you’re doing, the sky’s the limit.

tpo: What do you envision for yourself and other women in the field?

Grudier: I’d like to see it go to a 50/50 male/female split someday. Do I see that anytime soon? No. But when I first joined the NYWEA board, there were myself and one other woman out of 25 or so people. Now, I believe women outnumber men, and this is within a 10-year span. So the industry is changing rapidly. I see more women becoming operators. I can only hope the more of us there are, the more there will be. The word will get out. People will understand that it’s a great career path and a wonderful way to support yourself and your family. tpo

We welcome letters to the editor.
Share your opinions about *TPO* articles. **Send a note to editor@tpomag.com**

Biosolids and Biogas Technology

By Craig Mandli

Belt Filter/Rotary Presses

BDP INDUSTRIES 3DP BELT PRESS

3DP Belt Press from BDP Industries

The skid-mounted 3DP Belt Press from BDP Industries is a turnkey dewatering solution with all components integrated on a hot dip galvanized skid for easy semi-permanent installation. This skid includes a booster pump, sludge pump, emulsion polymer system, hydraulic unit, controls and a 20-foot stainless steel screw conveyor. The press includes an independent gravity section, vertical pressure section and paddlewheel distributor. Features addressing odor control concerns include odor hoods, enclosed gravity sections, piped away filtrate and noise-reducing shower boxes. **518-695-6851; www.bdpindustries.com**

BRIGHT TECHNOLOGIES, DIVISION OF SEBRIGHT PRODUCTS, 0.6-METER SKID-MOUNTED BELT FILTER PRESS

Belt filter press from Bright Technologies, Division of Sebright Products

The compact 0.6-meter skid-mounted belt filter press from Bright Technologies, Division of Sebright Products, has stainless steel frame and roller construction as well as radius wedge zone and wing roller for sludge dewatering. Components include a sludge pump, polymer system and washwater booster pump. Options include a sludge flowmeter, air compressor and discharge conveyors. With a compact, walk-around skid design, it can be utilized in as little as a 10-by-20-foot floor area. The Boerger rotary lobe sludge pump has a maintain-in-place design offering ease of maintenance. Cake solids of up to 35% can be achieved. Rates of 25 to 50 gpm make it ideal for small applications or when a processor has outgrown dewatering containers. **800-253-0532; www.sebrightproducts.com**

PRIME SOLUTION ROTARY FAN PRESS

Rotary Fan Press from Prime Solution

Prime Solution's Rotary Fan Press is a simple mechanical dewatering solution that provides effective results and eliminates the need to apply for waivers. It addresses the concern of space constraints and limited operator time available, with twice the throughput in a smaller footprint. Having the ability to start the machine up and schedule automatic shutdown by volume or time allows plant personnel the freedom to focus on other key responsibilities during the day. It offers low maintenance and wear parts, along with low energy and water use. **269-694-6666; www.psirotary.com**

Biosolids Handling/Hauling/ Disposal/Application

BOERGER BLUELINE ROTARY LOBE PUMPS

BLUEline rotary lobe pumps from Boerger

Boerger BLUEline rotary lobe pumps are a self-priming, valveless, positive displacement pump used for conveying viscous and abrasive materials. They are resistant to wear and provide pulsation-free operation. Operation is fully reversible, with dry-run capability and flow rates up to 7,000 gpm. They are constructed with maintenance-in-place design, allowing for all wetted parts to be easily replaced through the front cover without removing pipe or drive systems. The pump conveys biosolids (primary, waste activated sludge, return activated sludge, digested, thickened, etc.), grease, sewage, scum, lime slurry, alum sludge, permeate and polymers. **612-435-7300; www.boerger.com**

PAXXO LONGOPAC FILL

Longopac Fill continuous bag system from Paxxo

The Longopac Fill continuous bag system from Paxxo can connect to the discharge point of machines used to move, dewater or compact screenings, grit and biosolids. Material is then deposited in a 90-meter-long continuous bag for odor containment and spillage control. The cassette bag can be sealed with ease, and the material and odors are trapped inside, cutting down development of bacteria and fungus spores. **770-502-0055; www.paxxo.com**

Biosolids Heaters/Dryers/Thickeners

Electro-Osmosis Dehydrator from ELODE USA

ELODE USA ELECTRO-OSMOSIS DEHYDRATOR

The compact Electro-Osmosis Dehydrator from ELODE USA can easily retrofit in line with many existing presses. It is specified to reduce sludge disposal cost by 60% by producing much drier sludge cake. It uses the electrical potential difference in the sludge cake to separate water in the process and it works on 95% of municipal cakes tested without any chemical, polymer, heat nor mechanical press. It can be used to turn 15 to 20% DS cake to 40 to 45% DS quickly. **201-568-7778; www.elodeusa.com**

NEDERMAN MIKROPUL THIN FILM DRYER

Thin Film Dryer from Nederman MikroPul

The Thin Film Dryer from Nederman MikroPul is a versatile sludge dryer that can process all types of sludge, including digested, undigested and industrial sludge, as low as 10% DS. It achieves a variable sludge dryness range of 30 to 95% DS, and the dryer has been successfully utilized for various applications such as Class A, landfilling, composting, alkaline stabilization, incineration, gasification, pyrolysis and solid fuel production. With a simple design, the dryer has a single-drive motor, requires no separate feed system and generates less than 200 cfm of exhaust vapor, which can be easily treated. Its high-efficiency design consumes 1,150 to 1,300 Btu/lb of evaporated water and can recover up to 85% of this heat for other purposes, including digester and building heating. **704-398-7571; www.lcicorp.com**

OREGE THICKENER

Orege Thickener

The Orege Thickener increases the total solids concentration of industrial and municipal sludges up to 6 to 8% Total Solids while transforming the rheology of the sludge and allowing it to remain pumpable. When placed before an anaerobic digester, the thickening device allows for a significant improvement of the biogas production due to the conditioning step. It is designed to replace conventional equipment such as GBTs, RDTs, DAFs or centrifuges with low operational and maintenance costs. It reduces the polymer consumption while increasing filtrate quality. The hydraulic capacity is 100 to 300 gpm and it can be installed in three to five days. The system is available in fixed, mobile, skidded or containerized versions. **404-445-0289; www.orege.com**

Centrifuges/Separators

FLOTTWEG SEPARATION TECHNOLOGY XELLETOR

Xelletor series separators from Flottweg Separation Technology

Xelletor series separators from Flottweg Separation Technology include a rotor and scroll designed to reduce the consumption of polymer while also reducing energy consumption. Depending on biosolids quality, the centrifuge can save about 20% on energy while providing significantly better performance. It can increase throughput by up to 15%, reduce the volume of biosolids by as much as 10% and save up to 20% in energy and polymer consumption. **859-448-2331; www.flottweg.com**

Centrifugal decanter from Pieralisi

PIERALISI CENTRIFUGAL DECANTER

Pieralisi offers a variety of high-efficiency solutions for sludge thickening and dewatering with significant environmental and economic advantages. The separation of liquid-solids occurs through the centrifugal force generated inside the decanter, resulting from the high rotation speed. The decanter is equipped with a main motor connected to the horizontal axis of the bowl. The product is fed into the machine through a feeding tube. After the separation, the clarified liquid is discharged from one side of the bowl through devices sized according to the specific application, and the dehydrated cake, accumulated on the bowl walls, is transported by a scroll and discharged on the opposite side of the clarified liquid outlet. The decanters are suitable to treat sludge from environmental, chemical, oleo-chemical, mineral fuel and lube oils, animal-based products, food and beverage processes and can be configured to meet the application requirements. **513-275-4720; www.pieralisi.com**

Chemical/Polymer Feeding Equipment

BLUE-WHITE INDUSTRIES FLEXFLO M4

The low-shearing pumping action of FLEXFLO M4 peristaltic dosing pump from Blue-White Industries allows it to gently and precisely pump chemicals that off-gas, including peracetic acid and sodium hypochlorite, with no vapor lock and no lost prime. Advanced features include a highly responsive and intuitive 5-inch display, firmware that can be field updated, and easy-to-attach M12 watertight connectors. **714-893-8529; www.blue-white.com**

FLEXFLO M4 peristaltic dosing pump from Blue-White Industries

FORCE FLOW TOTE BIN SCALE

The Tote Bin Scale from Force Flow allows plant operators to accurately monitor the amount of polymer being fed from IBC-type totes for dewatering. Simply place the tote on the platform and monitoring begins, as there is nothing to install inside the tote. Monitoring systems prevent costly overfeed conditions and enable the documentation of the actual amount fed, which keeps the plant in compliance with federal and state reporting requirements. Users can remotely monitor from SCADA or PLC. The unit is available with the SOLO G2 digital display or with the advanced Wizard 4000 chemical inventory management system. **800-893-6723; www.forceflow.com**

Tote Bin Scale from Force Flow

LUTZ-JESCO AMERICA LJ-POLYBLEND POLYMER SYSTEM

LJ-PolyBlend Polymer System from Lutz-JESCO America

The LJ-PolyBlend Polymer System from Lutz-JESCO America is a dependable, motorized mixing machine with a corrosion-resistant housing, large turbine and multizone mixing chamber that provides uniform dispersion energy at the moment of initial polymer wetting. The prime mixing zone fully activates the polymer, while the second mixing zone promotes gentle polymer activation via a small turbine, lessening molecule fracturing. Its stainless steel injection valve prevents agglomerations and reduces the need for extended mixing time. The system includes a clear mixing chamber that provides visual monitoring of mixing polymer feed. Its compact design — only 1 to 1.5 square feet — means it's light and allows for easy installation and transportation. It has automatic pump speed adjustment via 4-20mA input, water flow sensor and priming port. **800-554-2762; www.lutzjescoamerica.com**

PolyCat blending and injection system from Park Process

PARK PROCESS POLYCAT

The PolyCat batch-type polymer blending and injection system from Park Process is used for the preparation of liquid polymer to aid in the flocculation of septic tank waste sludge in the dewatering process. The batch tank method allows for the time necessary to uncoil the long-chain polymer molecules, making them more effective in reacting with sludge solid particles. It is used in conjunction with standard solid separation devices, dewatering boxes, centrifuges, belt presses, filter presses and other equipment requiring flocculation to enable dewatering. **855-511-7275; www.parkprocess.com**

PULSAFEEDER PULSATRON SERIES HV

The Pulsatron Series HV from Pulsafeeder is designed for high-viscosity applications for precise and accurate metering control. It offers manual control over stroke length and stroke rate, with the option to choose between 4-20mA and external pace inputs for automatic control. Models are available with pressure capabilities to 150 psi at 12 gpd, and flow

capacities to 240 gpd at 80 psi, with a turndown ratio of 100-1. It comes with a reliable timing circuit, circuit protection against voltage and current upsets, panel-mounted fuse, solenoid protection by thermal overload with auto-reset, water resistance for outdoor and indoor applications, and guided ball check valve systems to reduce back flow and enhance priming characteristics. **800-333-6677; www.pulsatron.com**

Pulsatron Series HV from Pulsafeeder

Dewatering Equipment

AQUA-ZYME DISPOSAL SYSTEMS ADS

ADS dewatering unit from AQUA-Zyme Disposal Systems

The ADS 30-yard open-top roll-off dewatering unit from AQUA-Zyme Disposal Systems can be filled with 22,000 to 25,000 gallons of biosolids at 1% to 2% solids in about two hours. After draining for 24 hours, the unit can be picked up using a standard-capacity roll-off truck and transported for solids disposal. Sludge volume can be reduced by 80% with reductions to 98% in BOD, COD, FOG and TSS. Effluent is clear, the unit has few moving parts, and the size of filter media can be selected according to job requirements. Standard equipment includes a rollover tarp system; side, floor and center screens; 1/4-inch floor plate; 7-gauge side plates; four door-binder ratchets; eight drain ports; two inlet ports; and a long-handle scraper. Units are also available in a 15-yard size. **979-245-5656; www.aqua-zyme.com**

PWTECH VOLUTE DUO

Volute DUO from PWTech

The PWTech Volute DUO adapts the original dewatering drum concept for more efficient dewatering of difficult biosolids. When dewatered, biosolids that contain high concentrations of fibrous, inorganic or adhesive material can form a compacted cake that can be difficult to extrude from a traditional screw press. This can lead to clogging and may require reducing cake solids to avoid plugging. Utilizing twin counter-rotating screws inside a single drum to break up and move feed solids for dewatering, the unit enables maximum cake solids without compromising performance. Using a separate drive mechanism so the moving rings do not contact the screws as they move, the design also further reduces wear on the press, resulting in many years of maintenance-free operations. It can be utilized in virtually all dewatering applications; however, it is especially effective in applications that would otherwise create plugging or binding in more traditional screw press designs. **410-238-7977; www.pwtech.us**

Grinders/Shredders

NETZSCH PUMPS USA N.MAC

NETZSCH Pumps USA N.Mac twin shaft grinders have been designed to fragment a variety of materials. They are available in two different housing designs: the inline version for installation in pipelines and the channel version for installation into effluent channels or for horizontal, gravity-fed applications to prevent blockage and protect downstream equipment. There is a choice of different cutter cartridges featuring numerous tooth combinations for the desired degree of particle size reduction to fit the application. The grinders can also be stacked for successive particle size reduction. The mechanical seal cartridge design, a leak-free combination of mechanical seal and bearing cartridges, allows for quick and simple replacement and service. These grinders do not have to be removed from the pipeline or from the channel. **610-363-8010; www.pumps-systems.netzsch.com**

Twin shaft grinders from NETZSCH Pumps USA N.Mac

VAUGHAN CHOPPER PUMP

Chopper Pumps from Vaughan

Self-priming Chopper Pumps from Vaughan are designed to be easily accessed outside of the wet well while pumping waste solids at heavy consistencies, without plugging or dewatering of the solids. They eliminate the loss in production and mess, along with making it easy to service the pump to get it back in operation. **888-249-2467; www.chopperpumps.com**

Grit Handling/Removal/Hauling

JDV EQUIPMENT GRIT CLASSIFIER

Grit Classifier from JDV Equipment

The Grit Classifier from JDV Equipment traps sediment material such as sand, silt, gravel, ashes and coffee grounds, and delivers it dewatered to the solids discharge. An optional hydro cyclone increases the classifier's overall capacity by reducing the amount of water flowing to the classifier and diverting the excess water to plant flows, but passes the grit through to the classifier and ultimately for proper disposal. It is designed to avoid unnecessary downtime and costly maintenance/repairs associated with premature mechanical equipment failure. **973-366-6556; www.jdvequipment.com**

Headworks

IEP TECHNOLOGIES SMARTDS DYNAMIC EXPLOSION DETECTION

SmartDS Dynamic Explosion Detection from IEP Technologies

SmartDS Dynamic Explosion Detection from IEP Technologies is designed to provide high-speed detection of an incipient explosion with the highest level of false alarm immunity available for active explosion protection solutions. The system includes two primary components, the MEX-3 detector and its associated FAB-4 field programmable connection box. The system is programmable to accommodate a wide range of hazard and process conditions, including vacuum and positive pressure applications. It has the ability to analyze rate of pressure rise and to differentiate this from non-explosion pressure excursions. Dual sensors are used to increase the level of false alarm immunity. The system includes a history buffer for event recording, hygienic design, stainless steel body for demanding process environments, and ATEX approval. **855-793-8407; www.ieptechnologies.com**

PATTERSON DAVIT CRANE

Patterson Davit Cranes offer a low maintenance, easy-to-assemble design. They are available in 1/2- and 1-ton capacities with features such as a reliable brake with long life and readily available parts, a hot-dipped galvanized finish and no plastic sheaves or pulleys. The company is a supplier of corrosion-resistant winches, rigging, fittings, and custom products for lifting applications in the marine, construction and mining markets. **800-322-2018; www.pattersonmfg.com/davit-cranes**

Davit Cranes from Patterson

Screw Conveyor

Royal Screw Press from Charter Machine

CHARTER MACHINE ROYAL SCREW PRESS

Charter Machine's Royal Screw Press offers a small footprint and high efficiency design that has very low power consumption with a higher throughput. Using an integrated thickening drum, the system can concentrate feed solids up to 5% DS. The complete skidded system is ultra-quiet, large capacity and low maintenance. The removable washwater nozzle ring travels, with its self-cleaning nozzles, laterally the length of the drum and gives a maximum clean with minimum amount of water. The sleek skidded design includes controls, drum thickener, sludge concentrator tank, sludge pump and screw press. **732-494-5350; www.chartermachine.com**

Septage Receiving Station

SCREENCO SYSTEMS TRASH MASTER 600 AUTO SCREEN

The Trash Master 600 Auto Screen from ScreencO Systems uses gravity to separate the trash from the flow stream through a 6-inch inlet with dual fan spreaders. It is capable of power-offloading vacuum trucks with a single 6-inch offload or 2- to 4-inch offloads at the same time at a rate of up to 800 gpm. It comes with an aluminum hopper (stainless steel is optional), with an 8-inch outlet cam and 3/8-inch gapped 1/4-inch stainless steel bar screen. The stainless steel U-channel with ultra high molecular weight polyethylene plastic-lined titanium provides for years of wear, with a high-strength alloy steel 11 1/2-inch shaftless screw that moves trash to a waste container. The U-channel has slotted drain holes and a center-channel bar screen for cleaner and dryer trash. A custom-built stainless steel bar rake and cleaning brush are included for easy maintenance. **208-790-8770; www.screencosystems.com**

Trash Master 600 Auto Screen from ScreencO Systems

(continued)

Screening Systems

FlexRake IQ screening system from Duperon

DUPERON FLEXRAKE IQ

The Duperon FlexRake IQ platform provides real-time smart screening for maximum resilience at the headworks. It tackles high peaking factors due to extreme weather and difficult debris like flushable wipes, first flushes and settled solids. This is accomplished by system improvements and a sequence of operations that automatically responds in real time to optimize the screen field. The reimagined design focuses on smart enhancements to the raking device to manage heavy solids loading events with four times increased debris removal capacity, improved grit and rock handling and greater solids capture. During peak flow conditions, it adjusts the bar screen opening itself to provide additional hydraulic capacity and safety factor, matching the best capture rate to the flow volume in real time. **800-383-8479; www.duperon.com**

EVOQUA WATER TECHNOLOGIES (PART OF XYLEM) FORTY-X DISC FILTER ARMOR SERIES

Forty-X Disc Filter Armor Series from Evoqua Water Technologies (part of Xylem)

The Forty-X Disc Filter Armor Series from Evoqua Water Technologies (part of Xylem) is a high-rate filtration device that utilizes an integrated prescreen and stainless steel panels that are designed to accommodate high solids loading capacities and greater hydraulic throughput. The woven optimum primary mesh filter panel utilizes 316 L stainless steel threads to create a weave that improves solids collection and rejection, which makes this disc filter suitable for stormflow applications. The panel configuration includes a molded structural frame and pressured assisted seal, allowing the panels to sustain and operate at a higher headloss and provide higher throughput when compared to other disc filter synthetic media. The series combines the technology of outside-in and inside-out filtration into a single PLC controlled unit with influent water flowing through the prescreen (outside-in) into the disc filter panels (inside-out). This combination of two filtration technologies provides an effective option for challenging applications. **844-409-9492; www.evoqua.com**

FEDERAL SCREEN PRODUCTS MBBR SCREENS

MBBR Screens from Federal Screen Products

Federal Screen Products custom fabricates MBBR Screens that maximize flow rates while containing biofilm carriers, helping save on maintenance costs. They are fabricated with wedge wire by resistance welding V-shaped wire on shaped support rods. These thousands of fused points create a honeycomb-like structure that provides a strong and accurate continuous slot. This results in a product that provides accurate flow, distribution and effective media and debris filtration and retention. Wastewater screens are available in a wide range of profile wires to suit most systems, and can be designed in flat, curved or cylindrical form to meet customers' drawings and specifications. Robust for vertical wall applications, screens are also self-cleaning when designed to the flow rate and are passivated in-house, which allows for a quality of finish, extending product life. **905-677-4171; www.federalscreen.com** tpo

Veolia North America acquires U.S. Industrial Technologies

Veolia North America has completed the acquisition of U.S. Industrial Technologies, a Michigan-based provider of total waste and recycling services that has managed industrial waste streams for manufacturers, medium and small businesses, and governments and municipalities since 1996. The transaction includes the acquisition of USIT's main operational location in Livonia, Michigan and another operation in Knoxville, Tennessee. The Livonia center serves as a collection and storage location for complex waste streams from a wide variety of customers, most notably in the manufacturing sector. USIT employs more than 70 people at company-owned and customer facilities.

Flomatic names new municipal and OEM sales manager


Jim Tucci

Appointed by President Nick Farrara, Flomatic has promoted Jim Tucci to municipal and OEM sales manager. With an engineering background and over two decades of industry experience, including the past ten years at Flomatic, Tucci will take on the responsibility of cultivating relationships with OEM partners, municipal authorities and engineers.

Hydraulic Institute expands on-demand training resources

The Hydraulic Institute announced two of its new on-demand training products developed with its educational subsidiary, Pump Systems Matter. The Introduction to Pump Fundamentals is an on-demand workforce development training resource applicable to anyone with interest in the industry and is a starting resource for onboarding of new employees in sales, marketing, engineering, technicians and operations. The 13 Pump and Systems Fundamentals Training on-demand sessions provide a next-level fundamental understanding of all aspects of the system, pump, components and operation, which is specifically designed for pump manufacturers, sales reps, system designers, consultants and end users of pumps and systems.

Endress+Hauser breaks ground on new U.S. headquarters

Endress+Hauser and its sales and service partner, George E. Booth Co., broke ground on an approximately 106,000-square-foot commercial office and light industry facility in Greenwood, Indiana. The facility will house Endress+Hauser's projects and solutions, human resources and legal departments as well as a design and innovation studio for early education and workforce development. As part of the studio, approximately 2,500 square feet will be dedicated to STEM, allowing K-8 educators to visit the company's campus for field trips and extracurricular enrichment.

SIMFLO promotes Neubauer to VP of sales


Del Neubauer

SIMFLO has promoted Del Neubauer to the role of vice president of sales. Neubauer, who has been with SIMFLO for two years, previously served as vice president of engineered products for the company. A veteran of the pump industry for more than 30 years, Neubauer has held various sales and sales management positions focused on pumping solutions for industrial, municipal and other applications. In his new role, Neubauer will be responsible for leading SIMFLO's outside sales team, covering the municipal, industrial, agricultural and turf irrigation markets.

Eddie Olivo joins NETZSCH as regional sales manager


Eddie Olivo

NETZSCH Pumps announced that Eddie Olivo has joined the NETZSCH team as the new regional sales manager for the central region. He will be responsible for managing the sales to industrial and municipal distributors in the states of North Dakota, South Dakota, Nebraska, Kansas, Missouri, Iowa, Minnesota, Wisconsin, Illinois and the Upper Peninsula of Michigan, plus northern Indiana for municipal only.

Shandong Zhangqiu Blower celebrates 55th anniversary

Shandong Zhangqiu Blower, a global supplier of rotary lobe blowers, celebrated its 55th anniversary in October 2023. Founded in 1968, SZB now employs more than 1,400 people. After 30 years of establishing a solid foundation in China, the company began to export its blowers in the late 1990s. In 2008, with over 40 years of blower manufacturing experience, SZB established Eurus Blower in the U.S. The company manufactures positive displacement blowers, PD blower packages, multistage centrifugal blowers, screw blowers, vacuum pumps and slurry pumps. Types of PD blowers include bi-lobed rotor and tri-lobed rotor PD blowers.

WABAG to utilize Pani ZED in India

A partnership was announced by AI innovator Pani Energy and the third largest private water treatment operator in the world, WABAG. Starting in January, WABAG will be implementing Pani's water treatment plant optimization SaaS solution, Pani ZED, in one of India's largest water reuse plants, with additional treatment plants scheduled to adopt Pani's operations intelligence platform later on. tpo

It's your magazine. Tell your story.

TPO welcomes news about your wastewater or water treatment operation.
Send your ideas to editor@tpomag.com

By Craig Mandli

Wastewater plant finds creative upgrade

Problem

The F. Wayne Hill Water Resources Center in Gwinnett County, Georgia, dewatered biosolids with six Alfa Laval Sharples DS-706 decanter centrifuges. The machines delivered performed well and were reliable, but technology had advanced and the team wanted to explore sustainable solutions.

Solution

The 20-year-old decanters were replaced with **ALDEC G3-125 decanters** from **Alfa Laval** that improve performance and efficiency while using fewer resources.

RESULT:

The units increased cake solids from 21% to 23%, reducing weight hauled to landfill by 6,000 tons annually. They also saved more than $300,000 a year polymer costs and saved significant energy. The next phase will add dryers to remove 90% of the water from biosolids, yielding a saleable fertilizer, generating revenue and eliminating hauling costs. **713-934-3160; www.alfalaval.us**

High-capacity septage receiver improves operation

Problem

A Kentucky wastewater treatment plant implemented a solution to prevent wear and tear on downstream pumps from septage receipt. Plant officials settled on dedicated screening for septage to capture more debris. Requirements included a small footprint, a through-flow screen design with a moving bar grid, the ability to carry large materials including rocks and debris to an integral compactor, offloading using no brushes and screening deposition into a compactor with a high-torque motor.

Solution

The plant team selected a **Hydro-Dyne Engineering Dusky Shark Septage Receiving System.**

RESULT:

Septage haulers are extremely happy with the septage receiver speed and durability. The system is used to offload a typical 2300-gal tank in 10 minutes or less. The screen starts automatically when a truck starts the flow of septage and shuts down when the flow stops. The traveling bar grid changes speed for effective capture and to remove rags that can bind rotating equipment downstream. The receiver has internal water spray nozzles that rinse the tank and screen. No manual interaction with the system is needed. The screen picks up rocks, and the high-torque compactor can crush large objects. Screening volume is reduced by over 80% from the high torque compactor resulting in a minimum of waste carried offsite with a moisture content less than 50%. **813-818-0777; www.hydro-dyne.com**

Dryer system reduces biosolids hauling risks

Problem

The City and Bureau of Juneau, Alaska, produces 7,000 wet tons of dewatered biosolids each year. The material is hauled 1,300 miles by truck, barge and train to the Columbia Ridge landfill in Arlington, Oregon. This transport poses multiple risks and costs, and the utility faced uncertainty over environmental regulations.

Solution

Officials chose the **Veolia BioCon** medium-temperature **belt dryer.** The Class A EQ product provides pathogen reduction and diversifies end uses, which can include landfill cover material, fertilizer for community sites and parks, erosion control and topsoil replacement. These uses offer potential for significantly lower cost versus long-distance shipping to landfill.

RESULT:

The dryer is designed for 36 wet tons per day and produces 5.5 tons of dried product, an 85% reduction in volume and weight. **919-677-8310; www.veoliawatertech.com**

Rotary press helps plant increase dewatering capabilities

Problem

The Glasgow (Kentucky) Wastewater Treatment Plant serves a community of 15,000 and also provides treatment for Barren River State Park and two elementary schools. The replacement of rectangular secondary settling tanks by circular clarifiers greatly improved settling and solids capture capacity. Consequently, the plant found itself with additional biosolids.

Solution

A **Fournier Rotary Press** was installed to increase dewatering capacity. On summer days, solids at the bottom of the clarifier are thick enough to feed the presses without polymer. Polymer is required only in cold weather. In summer, solids are spread on drying beds to save on power costs. In all seasons, dewatered cake is trucked to the city landfill.

RESULT:

"It has worked great for us," says Jacob Billingsley, superintendent. "We run it about 3 1/2 days a week. After seven years of operation, we've spent less than $400 for parts, and we only use a gallon and a half of polymer an hour. That's our biggest savings. Having a SCADA system decreases the chance of a failure and loss of solids." He can dial up plant operations, receive alarms and make process adjustments using his cellphone. **800-463-6328; www.fournierdewatering.com**

Screening system eliminates wipes issues

Problem

Wipes were an ongoing issue in Glenbard, Illinois, causing maintenance issues with blocked pumps, aeration systems and other downstream equipment. Grinders did not solve the problems because the shredded material remained in the system and formed clumps downstream.

Solution

MS Bar Screens with 3/16-inch bar spacing from **Headworks International** now remove nearly all wipes from the flow.

RESULT:

The utility saved significant money and aggravation. The bar screen helps prevent fatbergs and overflows and frees up labor for more important work. **713-647-6667; www.headworksintl.com**

City improves operation and throughput capacity

Problem

The city of Marengo, Illinois, faced capital costs estimated at $2.1 million to repair and upgrade its aging temperature-phased anaerobic digestion process. The city sought an alternative disinfection and stabilization process.

Solution

The city commissioned a **CleanB system** from **BCR Environmental.**

RESULT:

The process consistently met Class B disinfection and vector attraction reduction requirements and significantly reduced repair, maintenance, energy and polymer costs, while also reducing odors. In addition, with reduction in nutrient return from digestion, effluent nutrient concentrations continue to decline. The system will enable the city to outperform regulatory requirements for biosolids and effluent. **866-724-9145; www.bcrinc.com/resources**

Overcoming escalating biosolids disposal costs

Problem

The Kalamazoo (Michigan) Wastewater Treatment Plant treats a mix of residential and industrial wastewater. Industrial loading accounted for 65% of influent BOD. The city faced rising costs for biosolids handling; landfill costs increased from $17.50 per wet ton in 2008 to $158 in 2020.

Solution

The city installed three **Centrisys CS26-4 decanter centrifuges,** which increased cake solids and substantially reduced biosolids volume.

RESULT:

The centrifuges improved the cake solids content from 16-17%, with the presses to between 21-23%, at 20-30% volume reduction. This reduced costs by $2.5 million per year. **262-747-2384; www.centrisys-cnp.com**

(continued)

Facility develops strategy for optimizing aerobic digestion

Problem

The Jacksonville Beach Water Reclamation Facility's digesters were using excessive energy, lacked homogeneous mixing and were not optimized.

Solution

Contrary to the common belief that aerobic digestion requires continuous aeration, a more effective and energy-efficient approach is cycling between mixing and aeration. This process improves nutrient reduction, alkalinity, dewaterability and volatile solids destruction by supporting endogenous respiration and nitrification. The **HYPERCLASSIC Mixing and Aeration System** from **INVENT Environmental Technologies** performs both mixing and aerating in one device, reducing the need for multiple equipment types. Additionally, since the device maintains a homogeneously mixed basin both with and without aeration, it allows for a unique level of process control and optimization. The enhanced control over aerobic digestion reduces operational costs and chemical addition, while improving energy efficiency. Its design includes a nonclogging hyperboloid mixer-body that ensures continuous, efficient mixing and aeration, even at high MLSS levels.

RESULT:

The aerobic digesters treat to 3% solids in three circular tanks and provide consistent quality feed to their dewatering process. The treated biosolids continue to meet Class B standards. **973-571-2223; www.invent-uv.de**

University upgrades system to handle variable flows

Problem

The University of Mississippi needed to upgrade to its wastewater facility built in 1972 as a dual-basin extended aeration plant. Flows varied widely with swings in on-campus population, from near zero at the Christmas break to extreme flows during home football games.

Solution

ESI converted one basin to a 0.75 mgd **oxidation ditch (Lakeside Equipment),** replacing the existing clarifier and recirculation pumping, upgrading the headworks and converting the other aeration basin to flow equalization. The Closed Loop Reactor process consists of reactors with a single feed for raw wastewater and return activated sludge. The simple racetrack configuration provides a straight-line flow for wastewater from the headworks to the final clarifiers.

RESULT:

The system has proven simple yet effective with a single drive that keeps maintenance and energy costs low. Aerators are controlled based on dissolved oxygen using variable-frequency drives. **630-837-5640; www.lakeside-equipment.com**

System maintains homogeneous biosolids to create efficient dewatering operation

Problem

Operators of the Scarborough Wastewater Treatment Plant in Narragansett, Rhode Island, wanted to produce more uniform and consistent consistency to affect a more readily dewaterable biosolids.

Solution

C3ND Environmental Consulting provided a **PHi-CA mixing system** from **Pulsed Hydraulics** due to its simplicity, mixing energy, and ability to maintain consistently uniform sludge solids throughout the entire holding tank. The system can be operated as needed during the period when the dewatering process is ongoing. The system consists of a bubble forming plate connected to 50 feet of chemically resistant air hose and a 1 hp linear air pump. Since this a portable device, the Scarborough staff moves it to one or more of their pump stations to eliminate grease and other debris accumulation.

RESULT:

Requirements were met and verified by the customer's Superintendent Scott Goodinson, president-elect of NEWEA. **800-641-1726; www.phiwater.com**

Company aids water treatment plant in repairing damaged equipment

Problem

A wastewater treatment facility in Amarillo, Texas, had a spillage emergency in 2023 caused by lack of repair and maintenance over many years. The spill lasted three days and spread 1 million gallons of partially treated sewage. A detailed review turned up six critical repair needs: blowers, headworks, site electrical, influent pump station, north secondary clarifiers and sludge equipment.

Solution

Rebuild-It Services and **Newman Regency Group** are working to rebuild, update and repair two damaged clarifiers. The team will also support the six repair needs. The first repair of the secondary clarifier was completed in a few weeks, followed by a rebuild of a primary clarifier drive. These repairs enabled more high- and low-flow capabilities, thus avoiding future spillage.

RESULT:

The plant team is confident that Rebuild-It engineers will help them with many other repairs over the next few years. The team will advise plant operators, repair equipment quickly and efficiently, and incorporate preventive measures to safeguard against future incidences. The team will also assess other equipment and offer retrofit services to further increase plant efficiency. **888-709-5676; www.rebuild-it.com**

Cost Savings with screw presses at water reclamation facility are notable

Problem

The Big Creek Water Reclamation Facility in North Fulton County, Georgia, is the county's largest in flow and service area. To accommodate population growth and economic development, the facility needed more capacity.

Solution

A phased expansion with multiphase construction started in 2020 with expected completion in mid-2024. The project included a new dewatering building commissioned in May 2022 and including two **Schwing Bioset FSP 1203 screw presses,** designed to replace five smaller screw presses. Each new press can process 2,600 dry pounds per hour of aerobically digested biosolids, versus a previous maximum throughput of 550 dry pounds per hour.

RESULT:

The presses operate 18 hours a day, five to six days a week. Five 25-ton trailers of biosolids are hauled to landfill daily. Hauling and landfill costs, electricity usage and maintenance all have been reduced. Each screw press operates at 50% of design capacity. The facility is ultimately designed for five FSP 1203 machines. **715-247-3433; www.schwingbioset.com**

Water reclamation facility implements grit removal system to improve plant operation

Problem

The 6 mgd George F. French Water Reclamation Facility, operated by Destin Water Users, serves a population of nearly 20,000 that can triple during vacation seasons. The grit removal facilities installed in 1983 were poorly performing, requiring frequent and costly maintenance.

Solution

The utility chose a baffled vortex **PISTA VIO system** from **Smith & Loveless** for its performance, small footprint, low maintenance, long service life and variable flows. The system offers variable inlet-outlet flexibility along with a 10-1 turndown, allowing flow variations from 1.2 to 12 mgd while removing 95% of particles down to 100 microns. Stainless steel tankage combats seaside concrete degradation. The system was fabricated in a controlled environment and delivered to the job site for low-cost installation.

RESULT:

The facility team has not found grit in its downstream basins, and significantly more grit is entering the dump container. Grit removal efficiency tests demonstrate greater than 98% removal of particles down to 100 microns. **800-898-9122; www.smithandloveless.com**

Osmosis dehydrator saves on cake disposal costs

Problem

The Henderson, Kentucky Wastewater Treatment Plant dewaters their biosolids to 17% cake solids via belt filter presses. Plant operators needed a way to further dry the solids to save in hauling and disposal costs.

Solution

They installed a 3.0-meter-wide **Elode Electro osmosis dehydration dewatering unit** from **Charter Machine** along with sludge holding bin and conveyors. The technology effectively takes 17% total solids cake and dries it to 42% total solids cake in under 2 minutes, with only the use of electrical AC power converted to DC power. It introduces the belt press dewatered cake to this DC field to separate water from solids via electrophoresis and electroosmotic processes.

RESULT:

Use of the Elode Electro unit resulted in a 60% reduction in hauling costs for the plant. **732-548-4400; www.chartermachine.com** tpo

OZ Lifting Products davit crane wheel base

The new wheel base from OZ Lifting Products can be used with its full range of davit cranes up to 1,200-pound capacity. Made in the U.S., the wheelbase is adjustable and has four different length positions: 56.57 to 77.57 inches long, 32.44 inches wide and 36.87 inches high. It weighs 140 pounds when fully assembled (without a crane pedestal base), so the total weight will depend on the davit crane used. With durable steel construction and powder-coat finish, oversized casters make rolling the base and moving the crane easy. The floor anchoring system allows the davit to rotate 360 degrees, even when under load.

800-749-1064;
www.ozliftingproducts.com

Blue-White CHEM-FEED MD3 dual-diaphragm chemical feed

Blue-White's CHEM-FEED MD3 is equipped with an exclusive dual-diaphragm hyperdrive technology for smooth, near continuous feed, like a peristaltic pump, but with no tube to change. The MD3 is outfitted with DiaFlex diaphragms, which are designed to last the life of the pump. There is a large 5-inch LCD display for easy viewing and intuitive touchscreen controls, plus advanced communication protocols that include 4-20mA, pulse inputs, industrial protocols and remote start/stop. MD3 is also built to adapt to the future with new software capabilities that will roll out in firmware updates.

714-893-8529; www.blue-white.com

product spotlight

wastewater

New drum screen eliminates maintenance issues

By Craig Mandli

In the world of wastewater treatment, drum screens are unsung heroes. Their compact design and fully automatic operation make them a reliable choice. But they do have maintenance requirements, such as frequent trunnion wheel replacement and lubrication schedules. Cleaning and making repairs inside the drum itself can also be a dirty, tedious effort.

Duperon solves these issues with the **Internally Fed Rotary Drum Screen.** The system, which is designed without the use of corrosion-prone trunnion wheels. Instead, the drum rides on a water-lubricated bearing that sits outside of the waste stream. The bearing itself is replaceable at chest level without the need to jack up the drum and work in the waste stream area under the drum.

"This thoughtful design not only eliminates the difficult and dirty job of replacing trunnion wheels, it also eliminates the need for operators to lubricate the bearing," says Bryce Funchion, mechanical engineer with Duperon.

A direct drive system eliminates chains and sprockets and is positioned outside of the wet area to further avoid corrosion. Clogging is minimized with quick release sprayers and an enhanced screen design that is customizable to suit individual treatment needs, including a variety of screen types and openings. In the event maintenance is required, the design includes the option for removable panels for quick access to the inside of the drum. No special tools are needed to access these areas, nor are they needed for the removal and cleaning of sprayers and wear strips.

Internally Fed Rotary Drum Screen from Duperon

In addition to being easy to operate, it also has a flexible design that can be modified onsite to fit the site's needs when changes happen, according to Mark Turpin, president of Duperon. Water inlet designs are customizable, as well, available on either side of the drum screen, providing options for difficult installation scenarios.

"Eliminating high maintenance components and designing for ease of maintenance throughout the life of the machine transforms the total cost of ownership and the operator's experience when working with the product," says Turpin.

According to Turpin, customers are delighted with the thoughtfulness of the design. "Someone finally listened to their experience and that goes a long way with operators," he says. "Feedback from the field is that the machine performs well and requires very little operator interaction to continually work properly in varied operating conditions."

800-383-8479; www.duperon.com

Blackline Safety G6 single-gas wearable detector

Blackline Safety has added new features and service plans to its G6 single-gas detector wearable device. G6 now features the same real-time connectivity as the company's G7 product line. Additional new features include an emergency SOS that workers can trigger in critical situations to get help, and an expanded suite of data and reporting analytics. The device also supports indoor location technology. The company has introduced two new service plans, Protect and Protect Plus, which bundle new features to fit within any safety program. Supporting H_2S, CO, O_2 or SO_2 gas detection, G6 alerts the person when they have come into contact with gas using attention-getting lights, sounds and vibrations, and sends immediate notifications to emergency contacts. In a situation where gas has rendered a worker unconscious, these notifications coupled with the new SOS functionality can be lifesaving both for the down worker and for others in the area.

877-869-7212;
www.blacklinesafety.com

HYMAX Clamp with added outlet option

The HYMAX Clamp with an added outlet option offers a comprehensive solution for preventing leaks and repairing water pipelines. The clamp features a mat-type gasket and stab-fit design, allowing for effortless modification of a pipeline system without the need for welding. With a convenient wraparound design secured by two to four bolts, it saves valuable time during repairs. The outlet provides accessibility for

service connections or temporary bypass creation. Also, the clamp is treated with molecular anti-galling on the nuts and bolts, ensuring durable, leak-free performance over an extended period.
855-457-2879; www.hymaxusa.com

Emerson Fisher Whisper Trim Technology

Emerson's new Fisher Whisper Trim Technology is for use in both rotary and globe valves, providing an extension to Emerson's current portfolio of Whisper noise solutions. This next generation of Fisher Whisper Trim technology addresses noise issues by using additive manufacturing and other advanced techniques to create trim designs with increased capabilities. Rotary valves are typically less expensive than globe valves, but they are inherently prone to higher noise levels due to their trim configuration. The new rotary style technology addresses this issue, with additive manufacturing used to provide up to 20 dBA of sound level reduction, a 10 dBA improvement compared to traditionally manufactured solutions. These noise reduction levels are achieved while largely maintaining the high flow capacities common with rotary valves, and this solution saves significant costs as compared to globe valve alternatives.
800-972-2726; www.emerson.com

LANXESS Lewatit MonoPlus exchange resin

With the new macroporous anion exchange resin Lewatit MonoPlus TP 109, LANXESS is expanding its range of selective resins for the efficient removal of contaminants such as PFAS from water. Lewatit MonoPlus TP 109 efficiently binds not only different PFAS but also complex anions such as nitrate, bromate, chlorate and perchlorate so that they can then be reliably removed from water. It can also remove chlorate from concentrated sodium hydroxide.
609-845-1500; www.lewatit.com

ADS Environmental Services ForeSITE ultrasonic level monitoring system

ADS Environmental Services has released its new ForeSITE ultrasonic level monitoring system for surface and stormwater applications. The system is designed for remote site monitoring in stormwater vaults and outfalls, rivers/streams, lakes, reservoirs, canals and is especially effective for flood-prone locations. The FS-UL is a fully integrated system with data logging, redundant cellular communications, nonvolatile memory and an integrated ultrasonic sensor. It is delivered with all necessary parts including a high-gain antenna, battery pack, mounting bracket, maintenance kit and accessories providing fast, easy setup. The FS-UL has measurement frequencies that are user-selectable. Additionally, it contains four user-definable alarms providing ongoing remote site data and alerts. The FS-UL delivers data to the cloud-based ADS PRISM software.
877-237-9585; www.adsenv.com tpo

product spotlight water

Cellular-based remote monitoring for water and wastewater facilities

By Craig Mandli

Water system operators need to constantly know if remote pumps and other infrastructure are working. The **Sensaphone Sentry system** offers water and wastewater facility operators an easy, cost-effective way to monitor equipment and other critical conditions around the clock.

The Sentry system uses cellular technology to remotely track up to five environmental and equipment conditions in water and wastewater settings, including tank levels, power failures, pump status and temperature. When the device detects issues, it instantly sends alerts via phone, text or email over standard cellular networks.

"The Sentry is compact and fits into a panel without modification and is designed to be used as a low-cost way to provide peace of mind that everything is okay at a remote site," says Dave DeFusco, vice president of engineering at Sensaphone. "The cellular communication allows for the device to be placed in any remote location, as long as it has cellular coverage."

The system is ideal for operations where internet or landline connectivity is unavailable or for replacing a traditional landline-based auto-dialer. Users can access information and make system changes from any web-enabled device or a mobile app.

"It's ideal for pump and lift stations or other locations where personnel may not be on site daily," says DeFusco. "It provides insight into a remote location when it otherwise may be too costly or difficult to monitor."

The Sentry stores all readings in the cloud and allows multiple devices to be managed from one account. No software is required, so installation, integration and management are easy. The device is housed in a durable aluminum casing and includes built-in power failure detection,

Sensaphone Sentry

a rechargeable backup battery and optional GPS location features. According to DeFusco, the unit is designed to replace proven monitoring technology.

"It is a replacement for our Sensaphone 400 and 800 models," he says. "Both have been very successful in monitoring water and wastewater applications for the past 20 years. But they require an analog telephone line, which are becoming increasingly unavailable. At the same time, cellular coverage has been increasing, in even very remote locations. Customers have been asking to replace their legacy auto-dialers with cellular devices for some time, and the Sentry fills this role."

Customers who have already switched over to the cloud-based products are looking forward to adopting them into their existing monitoring infrastructure. "The Sentry displays all readings in the cloud and allows multiple devices to be managed from one account," says DeFusco.
877-373-2700; www.sensaphone.com

people/awards

Enrique Lemus, public works wastewater crew leader in Huntington Beach, California, received the Mayor's HB Excellence Award for dedication to his duties and his team.

Martin Adams, general manager of the Los Angeles Department of Water and Power, and **Mike Markus,** general manager of Orange County Water District, received the Harriett M. Wieder Water Leadership Award from the Southern California Water Coalition.

Steve Elie, board vice president of the Inland Empire Utilities Agency, received the Kathy Cole Award from the Southern California Water Coalition for his dedication, perseverance and collaborative spirit.

John Fancy received the Alfred Jellison Award for Lifetime Achievement from the Maine Water Environment Association. He was pollution control superintendent in Thomaston for more than 30 years before he retired last summer.

Barwon Water's Biochar to Batteries project, which seeks an innovative use for biochar, received the Victorian R&D Excellence Award from the Australian Water Association.

The **Upper Trinity (Texas) Regional Water District** received the 2023 Gold Award for Exceptional Utility Performance from the Association of Metropolitan Water Agencies.

The **Bradford Sanitary Authority** was named Wastewater System of the Year by the Pennsylvania Rural Water Association.

The Metropolitan Water District's Pure Water Southern California demonstration plant is now the **Grace F. Napolitano Pure Water Southern Califonia Innovation Center.** It is named for Rep. Grace Napolitano, a champion for the environment and water recycling.

The **Marion City Water Treatment Plant** was recognized by the North Carolina Department of Environmental Quality Division of Water Resources for exceeding federal and state drinking water standards in 2022.

The **H2Go reverse osmosis water treatment plant** in Brunswick County won Honors Distinction in the American Council of Engineering Companies of North Carolina Engineering Excellence Awards.

The **Abingdon (Maryland) Water Treatment Plant** won Best in Show at the AWWA regional taste-test challenge.

Heidi Luckenbach, deputy director and engineering manager in the Santa Cruz (California) Water Department, will become water director after the retirement of **Rosemary Menard.**

TPO *welcomes your contributions to Worth Noting. To recognize members of your team, please send notices of new hires, promotions, certifications, service milestones or achievements as well as event notices to editor@tpomag.com.* tpo

events

Feb. 5-7
New York Water Environment Association Annual Meeting and Technical Conference, Marriot Marquis, New York City. Visit nywea.org.

Feb. 6-8
North Dakota Rural Water Association Annual Water Expo, Delta Hotel, Fargo. Visit ndrw.org.

Feb. 6-8
Evergreen Rural Water of Washington Annual Conference and Tradeshow, Great Wolf Lodge, Centralia. Visit erwow.org.

Feb. 19-21
Iowa Rural Water Association Annual Conference, Community Choice Credit Union Convention Center, Des Moines. Visit iowaruralwater.org.

Feb. 20-22
2024 Pacific Water Conference, Hawaii Convention Center, Honolulu. Visit hiawwa.org.

Feb. 26-March 1
Rural Water Association of Utah 2024 Annual Conference, Dixie Convention Center, St. George. Visit rwau.net.

Feb. 29
Colorado River Roundtable: Solutions for the 21st Century, University of California - Riverside, Palm Desert Campus. Visit awwa.org.

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