

# H<sub>2</sub>Oregon

Fall 2024  
Vol. 46, No. 4

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Fall 2024  
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Cover photo by Heath Cokeley

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# Safety - No Fence to Lean Against

by Heath Cokeley, Programs Manager/Circuit Rider



Who is responsible for your safety? Is it the weekly safety meetings many of us must attend? Is it your employer? Bottom line is, guess what... it's you. Life shouldn't present guard rails to keep us all safe, because when it does it seems like more and more frequently society leans on them until they fail. So, what is safety? Safety to me is not climbing in a hole that I can see cracking and spalling happening because guess what, that trench is thinking about failing. Being someone who has both been pulled out of an unsafe condition and who has pulled people out of unsafe conditions, safety is pretty important to me. I don't want to wait until someone else tells me something is unsafe before I evaluate it. All I am saying is how has it become that you are not your most important safety critic.

We all work in an industry that is plagued by strains and sprains. An unsafe act repeated time and time again is likely not going to hurt us the first or even the 20th time we do it, but at some point, it could bite us if we continue to do it. I know for me it is as simple as jumping in or out of the back of a truck, an act that I have done who knows how many times in my life. Unfortunately, now when I do it sometimes, I feel one or the other of my knees, both of which maybe haven't been treated the best in my life, is trying to bend in the wrong direction. Now I am not saying this is an easy thing to admit to oneself. I know for a good part of my adult life I have been 10 feet tall and bullet proof and having to admit that I may merely be 9 feet tall and bullet resistant is not something I want to have to do. The hard part is when the fix is as simple as installing a step that drops down under my bumper, then why wouldn't I take the opportunity to install that step before I hurt myself.

I say all that to get to the point of this article, which is quite simple. Slow down a bit, don't get tunnel vision, and watch out a bit more for our own personal safety. I know some will argue that it's the employer's job to watch out for your safety, and of course they need to, but at the end of the day it is not the employer who will be lying in bed for days, weeks, or even months if something bad is to happen. I fully recognize that those who know me could argue that I may not be the best person to lecture on safety, but it is because I have likely done it the wrong way at some point, and hopefully can keep someone else from making the same mistake. I hope all else is well in your world and with that, I'll see you down the road. 💧





# Passing of Knowledge

*by Monty Norris, Wastewater Technician*

We can all agree that knowledge and experience is leaving at a fast rate and most of those retirees carry the certifications for their plants DMR requirements. When they are gone the remainder of the team is sometimes left in disarray due to a lack of knowledge and training. It's not just the supervisor, but sometime the lead operator that has left and there has not been adequate training for the rest of the team because it was easier to just fix the issue themselves. Maybe that's not the case, but rather a one-man operation at a facility with a backup that only knows the basics of rounds with a couple of readings and the lead prefers it that way when he's not available. Possibly time is not given for the lead operator or supervisor to provide the training.

However, this is a two-way street, isn't it? Do they want the training or is it being offered to them, but they prefer to just do the rounds, mow the grass, keep the job responsibilities simple so there are no responsibilities required. Maybe at some point a different department is a better fit because the operations job needs are to have a competent/motivated operator that is going to find the time to gain the education and ask the questions of why/why not or how do I learn it?

What are the things that need to be passed on? Can't we just get what we need out of a book? We know that's not the case. Every plant has its little quirks. Plant knowledge, all the piping and valving regardless of the as-builds on hand, the adjustments to clarifiers to know how much of what is too much or not enough regardless of what the data tells us. How much air is enough or not enough and we all know 2.0mg/l is the correct amount, but some plants run better with less or more. All of the little lab intricacies and what the lab results are telling us. The seasonal changes that come every year that need operational adjustments to compensate for them. Don't forget the biosolids reports, QC testing, application rates for those that are land applying and monthly DRC reports.

In a nutshell make a plan whether you are the operator that knows your supervisor/lead is retiring or moving on or vice versa. Don't just assume It will be fine. In the two years since I started with OAWU this is a subject that keeps coming up. It's important to share our knowledge with one another and be able to accomplish our goals when others are gone. However, when in need, give our office a call and we'll be there to give a helping hand. 💧

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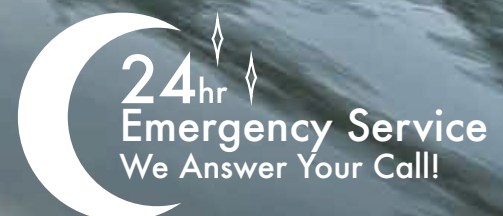
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# The Midnight Ride of Jake

by Bill Palmaymesa, Small System Trainer

“Jake. Jake...”, she whispered, nudging Jake’s shoulder, “Jake. You have a system alarm.” “Thearit,” Jake mumbled, still asleep.

“At least silence it.... So, help me, if you wake the girls, you’re taking them with you!” The last threat brought Jake to reality. He reached from under the covers and silenced the on-call pager.

As he slid out of bed, he let out a long sigh and muttered under his breath, “You never wake me for the fun stuff anymore.”

“I heard that Mister,” she whispered with a smile on her face, “Fun for who?”

Jake replied with a hushed “I love you” and a “be home soon” as he exited the bedroom. He considered himself blessed after stepping on only one Lego on his way to the mudroom. He got dressed, slipped on his Romeos, and headed out the back door to his pick-up. *I sure hope it’s not poop. Maybe I should just head out to the highway and check Lift Station 8, although it’s a right and 4 miles out of the driveway instead of a left to the office...*

His alarm pager didn’t have the capability to specify alarm location, so he decided to be safe and headed to the office to check the Alarm Logger on his computer. “SCADA”, he muttered to himself, “That needs to change.”

Jake had to drive by the well and system reservoir on his way to the office, so he decided to stop there first. *It was a rough summer. Lots of low-level alarms because people wouldn’t stop watering their lawns and gardens at night while the well’s trying to make up the difference.* It was Fall now, football season and almost deer season. *The well should have no problem maintaining reservoir level now.*

*Everything’s fine in here.* Jake thought to himself as he inspected the well house. *Well’s pumping steady at 110 gallons per minute, but bleach barrel seems lower than it should be... Better drive up the hill and check the tank level.*

His headlights hit the reader board on the side of the 30-foot-tall tank as Jake pulled up to the locked gate. His heart sank. Well call was set at 25 feet with the low-level alarm set point at 24.5 feet. The pick-up’s high beams illuminated the reader board indicator arrow, dancing mercilessly 2 feet from the top of the tank. *Main break!*

Jake flew out of the cab, unlocked and opened the gate and blew through it in a shower of gravel and dust. He climbed into the pick-up bed to find his valve wrench buried beneath shovels, valve keys, manhole pullers, empty Rock Stars and the dried-out scrap sod from Mrs. McKay’s meter replacement job. Popping the hatch on the reservoir outlet vault, Jake dropped in and began the laborious task of closing a 12-inch valve that hadn’t been exercised in years.

After what seemed like an eternity, he had the tank isolated from the distribution system. He climbed out of the vault and took a deep breath, listening to the well water cascading out of the snorkel and crashing into the tank bottom. Jake looked up at the stars in the clear night sky and thought, *now what?*

Oregon Association of Water Utilities has started a new program focusing on small community water systems with populations of 3,300 or less. These smaller systems, like Jake’s, share some of the same issues that our larger systems have, but often don’t



# Revere

have the resources, including the appropriate training, in dealing with these issues effectively. This small system program will provide technical, financial, and managerial support, and most importantly, training, in the following areas:

- Water supply reliability
- Source and treated water quality
- Utility board and operations management
- Infrastructure
- Droughts, floods, and earthquakes
- Funding, financial stability and water rates

- Regulations and safe drinking water standards
- Applying for and managing funds associated with state and federal funding programs
- Assessing and supporting opportunities for emergency interties, system consolidation and regionalization

As a fly-fisherman, I love the old adage regarding fishing and training, which I've taken the liberty to butcher for this illustration:

If you catch a fish for Jake, he'll eat for a day. But, if you teach Jake to fish, he'll know what to do next in the event of a catastrophic infrastructure malfunction and know how to prevent it from happening again! 💧

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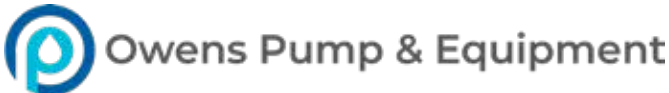
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# OAWU's Summer Classic 2024

The weather was fantastic, and the activities were great. Monday's pre-conference provided great classes and a few extra CEUs to those who attended. The conference was kicked off by an opening session given by OAWU's Board President Matt Johnson, followed by OAWU's Executive Director, Jason Green, and a legislative update by Mark Landauer. Tuesday held the evening barbecue with exhibitor time and prize giveaways. Wednesday continued with a full day of classes; some took the afternoon off to participate in the annual OAWU Golf Scramble at Gearhart Golf Links. Thursday concluded the conference at noon with some final words and the highly anticipated raffle drawings and cash prizes.

- Thank you to this year's Diamond Sponsors – The Automation Group (TAG), Ferguson, and Advanced Control Systems; our Gold Sponsor – Core & Main; our Silver Sponsors - H.D. Fowler and Owens Pump & Equipment; and our Bronze Sponsor - PACE
- Annual golf scramble at Seaside Golf Club which hosted 10 teams.
- At closing session, Thursday, OAWU gave away over \$2,500 in merchandise and \$550 in cash prizes.
- Congratulations to this year's raffle winners.
- The winner of a full registration to the OAWU Sunriver Conference in March 2025 was won by Jeff Pearson from Columbia River Dairy.
- We are pleased to report that between the raffles and auction items you were able to support the Jeff Swanson Memorial Scholarship fund with an additional \$4,220.

Thank you for supporting your Association.

Mark your calendar for next year's OAWU Summer Classic in Seaside, Oregon August 18-21st 2025. See you there! 💧



# in Seaside, Oregon



# OAWU's Annual Golf Scramble

*Gearhart Golf Links – August 21, 2024*

The day started off pleasantly warm; it was a perfect day to hit the links for this year's scramble. The staff at the Gearhart Golf Links were accommodating, friendly, and professional helping to make the day even more enjoyable.

Ten teams challenged the course this year, making for a great competition. No one was safe from the errant drive, misjudged chip shot, or the mocking one received when their shot landed two fairways over; we must also admit that there were many great players and many awesome shots on the course again this year. The banter helped build camaraderie throughout the scramble.

Special thanks to – Core & Main, H.D. Fowler Company, and Reiner Pump for being this year's sponsors and for their support of the attendees and the Association.

Congratulations to all the teams who played this year, but especially to the teams that placed.

1st place – Darrin Andersson, Dalton Knight, Ed Arden, James Johnson.

2nd place – Kyle King, Tomas Salcedo, Matt Cottrell, Eric Huson

3rd place – Craig Smith, Daniel Senn, Bill Reaser, Luis Milera

The winners of the golfing competition games were:

Longest Putt – Charles Groling

KP – Kevin Brown

Longest Drive #1 – Tam Truong

Longest Drive #2 – Dave Ingram

Special thanks go out to Sam Waller (Circuit Rider) and Monty Norris (Wastewater Tech.) who helped make sure the scramble went off without a hitch.

Mark your calendar for OAWU's next Summer Classic at Seaside August 18-21st, 2025. It is a great location to enjoy while you earn CEUs and network with the Associate Members and your peers. 💧



# UPCOMING CONFERENCES



Fall Operators Conference  
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# Personal Care Products in Wastewater

by Jason Coker, EPA Wastewater Technician

In today's society, personal care products (PCPs) such as soaps, shampoos, conditioners, lotions, toothpastes, and cosmetics are integral to daily hygiene and self-care routines. While these products play a significant role in maintaining personal health and hygiene, they also introduce a myriad of chemical substances into the wastewater stream, creating an environmental concern that is only beginning to be fully understood.

## The Invisible Residuals

Every time we take a shower, brush our teeth, or wash our hands, we are likely washing potential contaminants down the drain. These include a variety of chemicals like phthalates, parabens, triclosan, and synthetic musks, which are just a few examples of the organic compounds found in personal care products that can end up in wastewater. Even after wastewater treatment, these compounds can persist and be released into aquatic environments.

## Wastewater Treatment and PCP Residuals

Traditional wastewater treatment plants are designed to remove conventional pollutants such as biodegradable organics, nitrogen, phosphorus, and pathogens. However, many of the chemicals in PCPs are not fully removed during standard treatment processes. These substances are often designed to be biologically active, durable, and to withstand degradation to ensure shelf-life and efficacy, making them more likely to survive the wastewater treatment process.

## Environmental and Health Concerns

The environmental impact of PCPs in wastewater is a cause for concern. Some of the chemicals found in PCPs can have endocrine-disrupting effects, which can interfere with the hormone systems of aquatic organisms. These disruptions can lead to reproductive and developmental problems, among other issues, even at very low concentrations.

Furthermore, as these substances accumulate in the environment, there is a potential for them to make their way up the food chain and potentially affect human health. For example, some sunscreen ingredients have been found in fish, and certain compounds, like microplastics from exfoliating personal care products, have been detected in marine life, which in turn may be consumed by people.

## Advances in Detection and Treatment

Advances in analytical chemistry have made it possible to detect even trace amounts of these substances in water. As a result, scientists and regulators are becoming increasingly aware of the presence and potential impacts of PCP residuals in wastewater. Some wastewater treatment plants are experimenting with advanced treatment technologies, such as membrane filtration, advanced oxidation processes, and activated carbon treatment, to improve the removal

# Wastewater: The Unseen Contaminants

of these contaminants. However, these technologies are not yet widely implemented due to the additional costs and operational complexities.

## Regulatory Actions and Consumer Choices

Regulation regarding the environmental impact of PCPs is still in its infancy. Nonetheless, there is a growing movement toward the development of more stringent regulations to control the release of these substances into the environment. There is also an increasing push for the reformulation of PCPs to make them more environmentally friendly.

Consumer awareness is another powerful tool. As individuals become more conscious of the potential environmental impacts of the products they use, they can make more informed choices, opting for products with

biodegradable ingredients and fewer potentially harmful chemicals.

The residuals of personal care products in wastewater represent a complex environmental challenge that requires attention from multiple stakeholders, including manufacturers, consumers, scientists, and policymakers. As we learn more about the long-term effects of these contaminants, it is becoming clear that a proactive approach is necessary to mitigate their impact on ecosystems and public health. With increased research, innovation, and regulatory changes, as well as in consumer behavior, it is possible to minimize the environmental footprint of our daily personal care routines, ensuring that our pursuit of personal cleanliness does not come at a cost to the environment. 💧

## Jeff Swanson Memorial Scholarship

Jeff Swanson passed away on July 4, 2009, from esophageal cancer. Mr. Swanson was an accomplished and passionate Circuit Rider and Programs Manager for ten years at OAWU. He was a great water operator, manager, troubleshooter, treatment plant operator, instructor and a great friend.

Jeff had a warm and memorable personality, exceptional integrity, personal character and work ethic.

It is to Jeff Swanson's memory that this scholarship is named; he believed that obtaining education was paramount to a person's success and encouraged people to obtain it.

As Jeff would often say regarding one's attitude and actions, "Choose to make it a great day!"

An application with further details is available on the OAWU home page



at [www.oawu.net](http://www.oawu.net). The scholarship is awarded at the Annual Management and Technical Conference in Sunrive

Please submit application by January 31, 2025 to: OAWU Scholarship Committee, 935 N. Main St., Independence, OR 97351, Attn: Scholarship 2025

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# Our Career

*by Sam Waller, Circuit Rider*

As we know, the water treatment industry plays a crucial role in ensuring safe water for communities around the world. However, one of the challenges facing the water treatment sector is attracting young people to pursue careers in this field. As a Circuit Rider I come across this issue nearly every day. This article will explore several strategies to recruit young people into water treatment jobs.

First, is simply raising awareness about the importance of water treatment and the impact it has on public health. Many young people have never heard of water treatment and do not think about what it takes to keep reliably clean water flowing. Reaching out to local high schools to allow students to take field trips to the water plant could be a reasonable option and could be an opportunity to get a seasonal worker for summer months.

Another strategy for engaging young people in water treatment jobs is to highlight the rewarding career opportunities within the industry. Water treatment encompasses a wide range of roles, including water quality testing, treatment plant operation, environmental engineering, research and development, and water resource management to name a few. Hopefully, this point can be stressed in a field trip, but again, getting the word out is the key.

Furthermore, offering hands-on learning experiences, internships, and apprenticeship programs can help young people gain practical skills and experience in water treatment jobs. When I was in high school there were programs to get kids out into different fields to see different occupations and what they did day to day. Getting with local high schools to do this is a great idea but showing that you can get into a good trade without having to go to college and spend tens of thousands of dollars or more is important.

Attracting young people to water treatment jobs is essential for ensuring a talented and skilled workforce in this critical industry. By raising awareness about the importance of water treatment, showcasing the many career opportunities available, offering hands-on learning experiences, and fostering partnerships with educational institutions we can inspire and recruit young individuals to pursue careers in water treatment. Through these efforts, we can build a strong pipeline of talented and passionate professionals who are dedicated to ensuring access to clean and safe water for generations to come. ♦



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# Data Management

*by Tim Tice, Projects Manager*

In the normal everyday tasks performed by staff, sometimes we have checklists to follow to assure the task is completed both on time and without error. The checklist serves two purposes, a) a guide that creates uniformity during each task, and b) when a change in personnel doing the task, the transfer of information is as comprehensive as can be. When discussing procedures in training classes, it is all too often stated, “wish someone had shared that with me,” or “I was never given a checklist.” This is especially true when an operator leaves, and a new person is hired.

Data management (DM), from a continuity perspective, provides information that will assist those who follow in our footsteps to maintain the status quo. This is especially important as it relates to compliance. There are tasks performed by operators (routine coliform samples, repeat samples, daily monitoring reports), monthly regulatory requirements, that when not completed could put a system out of compliance. DM can take on many appearances, but DM should be for the betterment of personnel and the utility.

Missing paperwork, if it is truly missing, was likely put in the wrong place, or a file was moved to better its position to the person doing the task. Missing paperwork as it relates to electronic files becomes even more convoluted as each of us will name, arrange, and organize e-files to what makes sense to the individual. Electronic data management (EDM) is the process of “scanning,” to capture information from a paper document. Moving from using bulk filing cabinets to essentially an invisible format will cast fear among some people, but the amount of information (bulk paper) transitioned to e-files and the physical space is a vast difference.

The reason data exists in the electronic form is an attempt to streamline tasks, and reduce the manual steps taken to retrieve paperwork. EDM can also reduce errors, time and confusion. Yet, each of the three can have the opposite intended goal if not handled correctly. All too often I wonder where I placed an e-file. In a network setting, file placement must follow a management format that all understand.

To learn and understand filing methods using the EDM is one thing, but now consider “what” data should be managed. For operators of utilities data management can be considered from two perspectives, a) near term and b) long-term.

When attempting to keep up with routine tasks, it is the non-routine emergencies that interrupt the routine. There seems to be less time to reconsider our routine tasks to improve them.

It is this time, when taken, that an employee can ask and answer the question “what data” we should be tracking. As an example, one specific dataset is power consumption. The goal is to compare the kilowatt hours over specific time periods. During this investigation we are not looking at overall monthly cost, but the kilowatt hours consumed to move either water or wastewater. If

the amount of liquids moved during the timeline is relatively the same, yet more kilowatt hours are consumed, the efficiency of the components (motor, pump) may be diminishing. If the power consumption begins to spike, there could be evidence of eventual, sooner than later, failure.

Automation has played a significant role in tracking data, but we don't pay attention to the data because of emergencies or lack of time, then the data becomes useless. An example of automation is the tire pressure monitoring system on vehicles. It is an electronic system designed to monitor the air pressure inside a vehicle's tires. Short-term, it is an alert when tire pressure begins to fall. But long-term it will assist in uniformity of tire pressure, and even longer-term, improved tire wear and better mileage. If we ignore the frustrating lighted icon on the dash, what good is the information.

The list of what data to manage is ever evolving and regulatorily we must track some of it. Beyond that small list, an even bigger list can be created to better support the utility. The data collected this year may become a key component in decision making in the future.

Data management can also support asset management processes.

The last point regarding data management is sharing the information with those on our team. Keeping it to ourselves is dangerous because nobody is a mind reader, share the information. Better informed, goal minded teams will reach the finish line through their process. To better that process, as to how it is accomplished, can be discussed another time. The best of everything in life! 💧



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# Monitoring Distribution Pressure

by Scott Berry, Operations Manager

One of the little soapbox speeches Tim and I use in most of our classes is that water treatment and distribution is all about data collection and interpretation. What does that mean in the context of water distribution? What are the data sets that are available for your interpretation? The answer to that question is not as simple as: “the water is staying in the pipes.”

The purpose of a water distribution system is to reliably deliver water from source or treatment plant to the end user without a reduction in water quality and without unmetered water loss. Due to aging infrastructure, inconsistent flushing programs, inconsistent pressures, many distribution systems are failing to meet those goals. One of the tools you have at your disposal is monitoring pressures in the distribution system with chart recorders or data loggers. Once you have determined what is normal in a given area, at the very least you can recognize when you are outside of that range. When utilities do this, they can uncover pressure surges that can cause main breaks and also areas that dip below the 20 PSI minimum that could lead to contamination incidents. The net difference between high pressure caused by surges and low pressure caused by consumption can weaken pipes over time and cause major pipe failures resulting in high loss rates and reduction in delivered water quality. Short-term pressure surges, also known as “water hammer,” can have a variety of causes, including opening or closing valves too quickly or power failure. Surges have alternating very high and very low pressures and can cause main breaks and leakage as they travel through the piping. They can lead to compromised water quality by contaminants entering the pipe in the course of repairing a leak.

Proactive utility managers understand this. That’s why they don’t hesitate to invest the upfront dollars for pressure monitoring systems. They know that over time, tracking and reacting to pressure fluctuations will save them money. When they are armed with pressure data, utility operators and managers can recognize surges that can be caused by malfunctioning soft starts, incorrectly programmed Variable Frequency Drives, or a host of other issues. They can then schedule maintenance before problems become more expensive. They can identify potential infrastructure failures before they happen. Operators can even use pressure monitoring to find large leaks in their systems, reducing the amount of non-revenue water they accumulate each year. Keeping the operating pressure within an optimal range protects public health, minimizes main breaks and repairs, and lowers operating costs.

Sometimes finding and repairing a leak isn’t solving the problem, it’s simply treating a symptom of a larger problem. 💧



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# Reading This Article Could Save Your Life

*by Mike Collier, Deputy Director/Source Water Specialist*

After reviewing some of the older issues of H2Oregon one of the articles sparked my interest. This article was “Be Prepared” by Hans Schroeder, one of OAWU’s Circuit Riders. Reading the article made me think about all of the different areas in life where it is important to be prepared. I realize that there are probably millions of situations where proper preparation is needed, but one in particular came to mind. That is the area of first aid, particularly the life saving techniques of CPR and the Heimlich maneuver.

It is important to take a class on these life saving techniques and to periodically complete refresher courses on them. This will help to ensure that you will be prepared if, God forbid, an emergency does occur and you are needed to save a life. The monetary cost of taking these classes is negligible when compared to the possible outcome of a life saved. You never know who you may save; it could be a friend, co-worker, son, daughter, husband, wife, or a stranger.

Something else to consider, what if someone you love is dying and you are not present? You would thank God if someone nearby saw them in trouble, had taken a class, and came over to help save their life. As you can see it is not only important to take the classes for yourself, but to encourage others to also take these types of classes. It may even be worth hosting an event for your co-workers or mandating the class for your employees.

As many have said “the proof is in the pudding;” so now for a story from my personal experience. I have taken classes on CPR, Heimlich maneuver, and First Aid periodically throughout my life. However, I must admit I am not currently certified. I personally thought that I would never have to use the techniques and was actually worried that if presented with a situation where these techniques were needed I would be too scared to perform them. I also thought, surely someone else would be able and willing to take charge if there was a need for a life saving technique in a public place. The problem with this thinking was that I did not figure that I may be the only person present at the time of the emergency and that the person in trouble could be my roommate and one of my best friends.

This all began when I was in my final year at college; I was telling my roommate a story in our kitchen/ dining room. He went into the fridge to get something to eat. As we were poor, lazy, college students, he came out with a few pieces of plane bread and began to gulp them down as I continued my story. At one point during the story I expected a reaction from him, or at least some sort of response, but nothing came so I looked over to him. He was staring at me with his hands raised up behind his head, similar to how someone would have their hands if they were resting on a hammock. Only he wasn’t relaxing at all, in fact he looked very concerned.

As I finished the sentence I was working on, my roommate went to the sink, got some water, put it in his mouth, leaned his head back, and when he brought his head back down he just spit the water out onto the floor. After the water hit our kitchen floor I realized something must be wrong; it was not every day that my roommate would spit water onto the floor. At that moment a process I had not thought of in many years began to automatically kick in – I don’t know how it did, it just did.

I asked, “Are you ok?”

He responded by shaking his head, No.

“Are you choking?”

He shook his head, Yes; immediately he again raised his hands to the top of his head

(apparently he had never learned the universal symbol for choking).

Finally, I asked “Can You Breath?”

Again he shook his head, No.

My first thought; Ahhhhhhhhhhh! “No?” What does he mean by NO!!!

What do I do? How much time is their? Do I know how to..... After all of these thoughts had passed, probably taking a second, but feeling more like an hour, I continued working on auto-pilot.

I grabbed my friend, spun him around, found his belly button, moved up his stomach one fist width and gave one large thrust. Nothing happened.

I thought, ohhh no..... Am I doing this right? Should I call 9-1-1? How many thrusts will this take? I don't think they ever mentioned the number in any of the classes – Did I miss that part?

I gave a second thrust and to my astonishment, and relief, a wet chunk of bread shot out of his mouth and directly into the sink (He shoots – He scores!!). He was fine; it had worked!

My friend went on like nothing had even happened, but I was shaking like a leaf with all the adrenalin that was pumping through my system. Even now, thinking back on the day I can get a little edgy and pumped up.



Here Dave, on the far right, is one of the witnesses at my wedding.

As you can see, you may not use a life saving technique tomorrow, but if a situation when it is needed comes up you will sure be glad when your training kicks in. It is definitely worth it. Dave (I just now am telling you my friend's name) is one of the truly good guys in this world. I have never seen him do something out of spite or anything that was not from a pure motive; he is still one of my greatest friends. To just think if I was not present in the kitchen that day with the necessary training. . . ♦

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# Char Sui (Chinese BBQ Pork)

by Keith Bedell, Wastewater Technician

This is for Char Siu, also known as BBQ Pork, and I believe it turns out better than what you can purchase in a restaurant. It is not dry, and the flavor is outstanding.

Prep time is about 30 minutes

Cook time is 2-4 hours

Servings is 8

I used a pellet grill, but you can use any heat source that you want.

## Ingredients

- 2 pounds of pork tenderloin or pork tenderloin tips
- ½ cup of teriyaki sauce, I like a sesame teriyaki sauce
- ½ cup of chicken broth
- ¼ cup of soy sauce
- ¼ cup of ketchup
- 2 tablespoons of Hoisin sauce
- 4 cloves of garlic minced
- 1 teaspoon of Chinese 5 spice powder
- A few drops of red food coloring, optional, it gives it that Chinese BBQ pork look

## Instructions

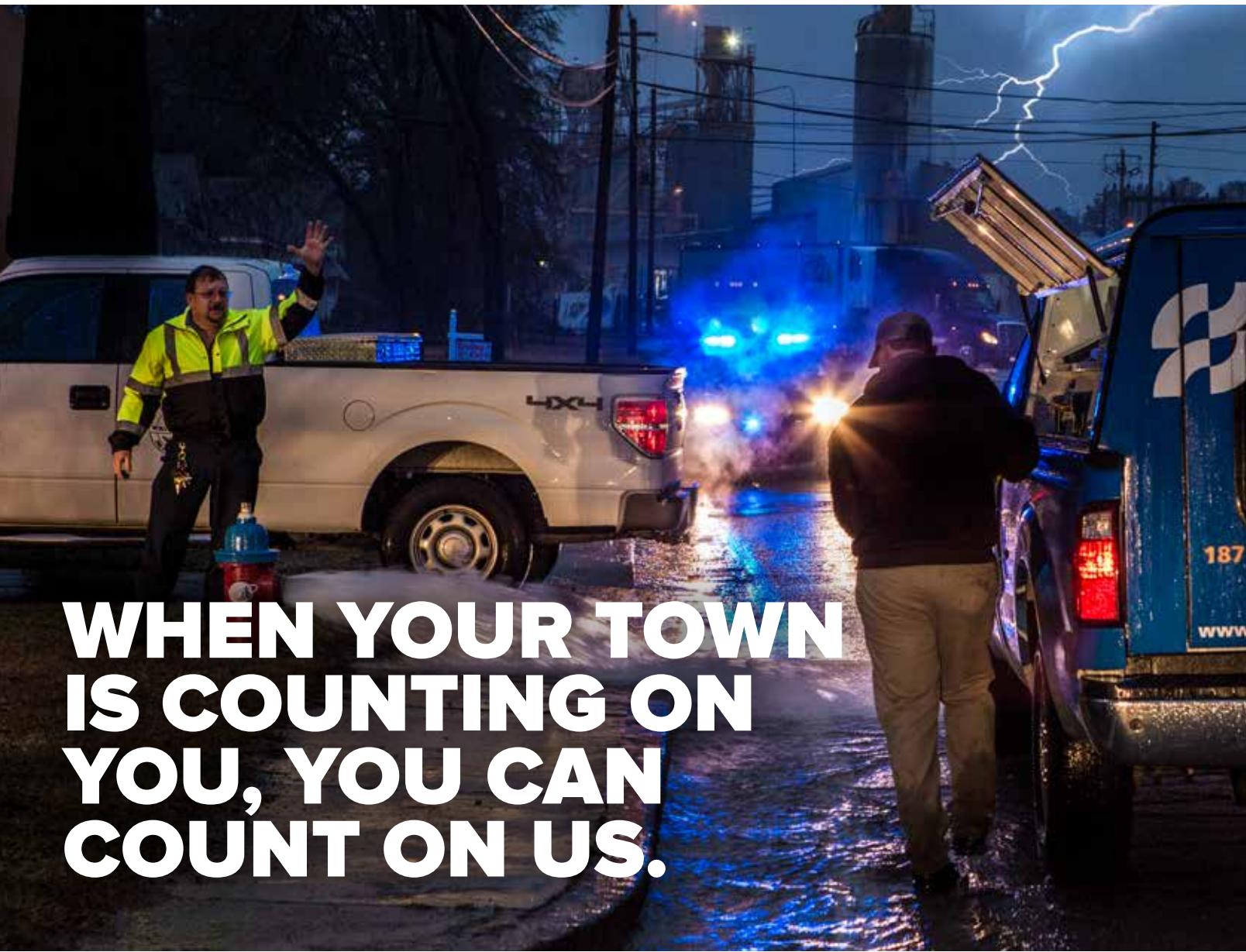
1. Place the pork in a large Ziploc bag, I use a vacuum seal bag
2. Combine all the remaining ingredients in a medium-sized bowl and pour in the bag over the pork.
3. Seal the bag tightly getting all the air out and refrigerate
4. I marinate it from 2 – 4 days, longer the better
5. Remove the pork from the fridge long enough to reach room temperature or close

## To smoke the pork, which is my preferred method

1. Set your smoker/pellet grill to 220 degrees F and remove when the internal temperature reaches 147 degrees F (I do between 2-3 hours but check your temperature),  
Remove it from the smoker and wrap it in foil, allow it to rest for a minimum of 10 minutes.

It should come out very moist and very flavorful. Might take a couple of times to get it perfected but doesn't everything. Enjoy with some good yellow Chinese Mustard. This recipe will like have a positive impact on your waste stream. 💧





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# Annual Water Use Reporting

by Laura A. Shroeder, Caitlin Skulan and Max Jones

In Oregon, water belongs to the public and Oregon Water Resources Department (“OWRD” or the “Department”) is responsible for the uses of all water resources. In an effort to ensure beneficial use of water and account for its use, the Department mandates annual water use reports from certain water utilities. These reports include accounting for the amount of water used, the time periods of those uses, and the types of uses.

OWRD’s reporting rules depend on the source of water and regulate “governmental entities” more strictly than individual users in most instances. Governmental entities include “any state or federal agency,” “local government,” “irrigation district formed under ORS Chapter 545,” “water control district formed under ORS Chapter 553,” and “any other special purpose district organized under state law.” The following article discusses important issues for utility managers to consider when filing annual water use reports with the OWRD.

## Report Rules

Measurement of the amount of water used is taken at the source where the water is withdrawn or pumped called the point of diversion (“POD”) or appropriation (“POA”) Unless a term in the water right of use requires otherwise, December 31st is the annual deadline when utilities must report monthly water use for each POD or POA from the previous water year (October 1 to September 30). Missed deadlines could result in OWRD regulation and may complicate later processes should the water utility desire to change a term in its water right of use.

OWRD provides water utilities specific forms for the annual report. Within the pages of the official filing, water utility managers must address various questions related to water use. Managers must include the monthly volume of water

diverted or pumped from natural flow and/or stored water for each major category of use at each point of diversion listed on the water right of use. However, certain water sources require different measurement procedures. For example a utility measures: (1) in-reservoir uses by the volume of water impounded on approximately the same day each month, (2) instream water rights by the monthly volume of water flowing through the channel for at least one location the water right covers, and (3) instream uses from storage by the volume of stored water released every month. Alternatively, a utility need not measure and may assume the volume of water it uses each month is the maximum quantity the right allows if the water right (1) is for storage of less than 9.2 acre-feet of water for in-reservoir use or (2) specifies a rate less than 0.1 cfs.

Since October of 1992, the Department has required plus or minus 15 percent accuracy for reported monthly volumes. However, OWRD may grant extensions of time if the utility cannot comply with the accuracy requirement if certain conditions are met. The utility must show that compliance would cause economic hardship, demonstrate that an extension of time would allow for more accurate measurements, and submit a compliance schedule detailing proposed steps to ensure future accurate reporting.

## Methods for Measuring and Computing Water Use

Monthly measurements for annual use are a component of an accurate report. Utilities often manage an array of sources and that complicates data reporting. Accordingly, OWRD requires use of specific measurement methods to increase report accuracy and reduce utility confusion.

Where practical, total utility water use is measured at each point of diversion. This, however, is not always possible for a variety of reasons. Therefore, water measurements may be recorded at a “reasonable distance” from the point of diversion



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if certain conditions are met. If measuring at the point of diversion is not practical, a utility must correct the recorded flow through balancing periodic point of diversion flow measurements with more frequent recordings at the usual measuring point. Further, if a measured flow includes contributions from more than one point of diversion, the utility must proportion the measured flow to each diversion point. Finally, if a utility uses the corrective method, its annual reporting must describe (1) the first time it is used and (2) any time it is changed, or once every five years, whichever is shorter.

Utilities that divert water from open channels are beholden to different measurement rules and methods. OWRD permits use of the Velocity-area Method, Weir Method, or Flume Method but all methods must comport to general measurement rules for open channels. A utility must retain copies of all measurement notes, rating curves, and calculation for three years and make them available to OWRD upon request. Further, the utility must equip channels with a staff gage and/or continuous stage recorder installed in a location that provides an accurate reading of the control crest depth at all elevations. If only a staff gage is installed, an observer must read the staff gage and

record the reading at uniform intervals. The interval may not be more than three days.

Utilities that utilize diversions that OWRD or the U.S. Geological Survey currently monitor are in luck. In these cases, the utilities can report the gage number if the station is at its point of diversion or the station number and an adjustment if the station is close to its point of diversion. However, state or federal gaging stations may not remain active indefinitely. Thus, it is important to remain knowledgeable of currently approved flow measuring procedures.

Water utility managers must remain aware of the complex rules that dictate measurement procedures for the OWRD required annual water use report. At Schroeder Law Offices, P.C., we can assist water utilities in navigating the confusing array of administrative laws to ensure compliance with Oregon water law. 💧

*Schroeder Law Offices, P.C. was founded by Laura A. Schroeder and represents water-rights clients in six western states and consults internationally. Max Jones is an Associate Attorney and practices in Oregon. You can read more about other water rights issues at Schroeder Law Offices' Water Law Blog, <http://water-law.com/home/blog/>.*

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# Did you Hear That?

*by Heather Davis, Apprenticeship Coordinator*

How well do you listen to your coworkers? I'm guessing you're saying, "I listen pretty well." But do you really? I know this may seem like an unusual question to ask, but I think it is something we need to ask ourselves. Do we really hear what others are saying?

First things first, there is a difference between hearing someone and listening. For example, when we hear a sound, we have to really listen to find out what it is. When it comes to hearing someone, they can talk, and we know they are talking, but not paying that much attention to what they are saying. I'm sure everyone has a moment when we hear someone say something and we have to ask what they just said, because we thought they said something really crazy. It happens... we all have those moments. Here, in our office, we have walls in different places and sometimes sound travels in different ways. So, someone could be on the other side of the office and hear parts of a conversation, sometimes really weird parts, and they have to come over and ask what is going on, because they are hearing some really unusual things. Now they are actually listening to what the person said.

There are also times when we are listening to someone, but do not understand what they are saying. I have been accused a few times of not listening to someone, the truth was I was listening, but not understanding what they were saying to me. There were two people that I knew who would have conversations that would turn into arguments, because they thought the other person was not listening to them. So, I would reword what one of them was saying and then the other person would understand what the person was saying. Instead of saying the same thing over and over, sometimes it just takes a little rewording to get the other person to understand what someone is saying. Sometimes, we need things explained to us in a different way, or some parts explained a little more in detail to understand what someone is saying.

So, the point that I'm trying to make is, make sure we're listening to others when they are talking and when we are explaining something, try rewording what we are saying to ensure understanding. Ask them if they need to have something explained further. Lastly, don't be afraid to ask someone to explain more when we don't understand what they are saying. ♦

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# UPCOMING TRAINING & EVENTS

Date	Class Title	Location	CEU Information	ESAC#, Fee/Free
October 1-2	2024 Fall Operators Conference	Canyonville	1.4 Water/Wastewater	TBA Fee
November 5-7	Spirit Mountain Casino Operator's Conference – 2024	Grand Ronde	2.0 Water/Wastewater	TBA Fee
December 9-12	Annual End of Year Operator's Conference	Hood River	2.3 Water/Wastewater	TBA Fee

## 2025 Oregon Association of Water Utilities Training & Events Schedule

March 3-7	47th Annual Management & Technical Conference	Sunriver	3.0 Water/Wastewater	TBA Fee
August 21-24	31st Annual Summer Classic Conference	Seaside	2.3 Water/Wastewater	TBA Fee

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For additional information, please visit <http://public.health.oregon.gov/HealthyEnvironments/DrinkingWater/OperatorCertification/Levels1-4/Pages/exams.aspx>

Drinking Water Data Online

<https://yourwater.oregon.gov>

Drinking Water Services

<https://www.oregon.gov/oha/PH/HEALTHYENVIRONMENTS/DRINKINGWATER/Pages/index.aspx>

*Training class dates, class topic and/or locations may be subject to change as needed.*

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# QUIZ CORNER

1. What is the newest city in Oregon?  
A. Ontario                      C. Sodaville  
B. La Pine                      D. Gold Beach
2. What was Oregon's first capital?  
A. Oregon City                  C. Salem  
B. Portland                      D. Eugene
3. About how many countries are there in the world?  
A. 50                              C. 200  
B. 100                             D. 400
4. Which of these rivers is often cited as the longest river on earth?  
A. Nile                            C. Ganges  
B. Delaware                    D. Yamuna
5. Which of these languages is English most closely related to?  
A. Russian                      C. Gujarati  
B. German                      D. Spanish
6. The 3 main types of trench protection are:  
A. Sloping/benching, Shielding, Shoring  
B. Sloughing, Spalling, Bulging  
C. Hoping, Wishing, Praying
7. The average weight of a cubic foot of soil is \_\_\_lbs:  
A. 100                             C. 75  
B. 125                             D. 50
8. Where employees or equipment are required or permitted to cross over excavations over \_\_\_ feet in depth and wider than 30 inches, walkways or bridges with standard guardrails shall be provided.  
A. 4                                C. 6  
B. 5                                D. 7
9. The Competent Person is responsible for inspecting the job site at the beginning of each shift and when any significant change in weather or other environmental change occurs:  
A. True                            B. False
10. During confined space work, an individual may enter a space classified "alternate entry" without assistance or stand-by attendant?  
A. Yes                              C. Only with mechanical ventilation  
B. No                                D. Both a and c

ANSWERS: 1-B, 2-A, 3-C, 4-A, 5-B, 6-A, 7-A, 8-C, 9-A(TRUE), 10-D

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City/State: \_\_\_\_\_

County: \_\_\_\_\_ ZIP: \_\_\_\_\_

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

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

Contact Person: \_\_\_\_\_

Number of Hook-ups: \_\_\_\_\_

Were you referred? By whom \_\_\_\_\_

### Type of System:

Water       Wastewater       Both

### Membership Category      Membership Dues

- |  |                                |
|--|--------------------------------|
| <input type="checkbox"/> Regular Member    | \$ _____<br>See schedule below |
| <input type="checkbox"/> Associate Member  | \$600.00                       |
| <input type="checkbox"/> Individual Member | \$100.00                       |

### Regular Member Dues Schedule

1 to 100	\$75 + 48 cents per connection
101 to 500	\$85 + 48 cents per connection
501 to 1,000	\$90 + 48 cents per connection
1,000 and up	\$100 + 48 cents per connection
Maximum dues is	\$1,400.00

Please Invoice       Payment Enclosed

*Credit cards: please call 503-837-1212 for processing and receipt.*

Please return to OAWU:  
935 N. Main St., Independence, OR 97351  
or email: office@oawu.net or fax: 503-837-1213

## Membership Types

### Regular Member

A Regular Member shall be any water or wastewater utility, public or private, engaged in the production, distribution or reclamation of water. A Regular Member shall have one vote. Annual Dues: See Regular Member Dues Schedule

### Associate Member

An Associate Member shall be any organization, individual or corporation, supplying services or equipment to water and wastewater utilities. An Associate Member shall have one vote. Annual Dues \$600.00 per year

### Individual Member

An Individual Member shall be an individual involved in the water/wastewater industry or a user of such utilities. The membership is informational in nature and shall be non-voting. Annual Dues \$100.00 per year

## Benefits of Membership

- On-site technical assistance
- Various free training programs
- Discounts on training courses
- Discounts on Annual Conference registration
- Access to on-site training program
- Subscription to quarterly H2Oregon magazine
- Direct mailings about upcoming training courses in your area
- Summaries of legislative issues
- Legislative representation at state and federal level
- Associate Member Services and Products Guide
- Access to technical assistance library
- Access to technical and testing equipment for loan
- Voting rights in Association affairs
- Positive contacts with other organizations
- Camaraderie with water and wastewater professionals
- Operator Of Record services
- Job referrals, announcements and searches
- Well testing, plan review, rate studies, WMCP plans
- System performance evaluation and options
- Additional programs and services
- Disaster response assistance and planning



**MB24**



# MEMBERS



62nd Court Mutual Water Company  
 Adair Village, City of  
 Adams, City of  
 Adrian, City of  
 Agate Water System  
 Albany, City of  
 Albany Rifle & Pistol Club  
 Alfalfa Water LLC  
 Alpine Crest Improvement Dist.  
 Amity, City of  
 Ananda Center at Laurelwood, Inc.  
 Arch Cape Water & Sanitary District  
 Arlington, City of  
 Arrowhead Mobile Home Park  
 Aspen Lakes Utility Company, L.L.C.  
 Astoria, City of  
 Athena, City of  
 Aumsville, City of  
 Aurora, City of  
 Avion Water Company  
 Baker City, City of  
 Bandon Dunes Resort  
 Bandon, City of  
 Banks, City of  
 Barlow Water Improvement District  
 Barlow, City of  
 Bay City, City of  
 Bay Hills Water Association  
 Bayou Water Improvement District  
 Beaver Water District  
 Beaverton, City of  
 Bend, City of  
 Benton County Service District  
 Bents Court Water Co.  
 Berndt Creek Water Corp.  
 Beverly Beach Water District  
 Biggs Service District  
 Black Butte Ranch  
 Black Mountain Water District  
 Blue River Water District  
 Blue Spruce Estates  
 Bly Water & Sanitary Dist.  
 Boardman, City of  
 Bonanza, Town of  
 Boring Water District #24  
 Brandy Bar Landing, Inc.  
 Breitenbush Hot Springs  
 Bridge Water District  
 Brightwood Water Works  
 Brooks Community Service District  
 Brownsville, City of  
 Buell-Red Prairie Water District  
 Bunns Village Properties, LLC  
 Burlington Water District  
 Burns, City of  
 Burnside Water Association  
 Butte Falls, Town of  
 Camp Baker BSA  
 Camp Rilea  
 Canby, City of  
 Canby Utility  
 Cannon Beach, City of  
 Cannon View Park, Inc.  
 Canyon City, Town of  
 Canyonville, City of  
 Carlton, City of  
 Cascade Locks, City of

Cave Junction, City of  
 Cedarhurst Improvement Club, Inc.  
 Central Coast Clean Water Company  
 Century Meadows Sanitary System, Inc  
 Century Meadows Water System, Inc.  
 Charles Tracts Water Company  
 Chart Water Supply, Inc.  
 Chehalem Mt. Sun Ridge Association  
 Chenoweth Water PUD  
 Chiloquin, City of  
 CHR Dist. Improvement Co.  
 Christmas Valley Domestic Water  
 Cimarron City Water Co., Inc.  
 Circle C Improvement Dist.  
 Clackamas River Water  
 Clarks Branch Water Association  
 Clatskanie, City of  
 Clayton Creek Water Association  
 Clean Water Services  
 Cline Falls MHP  
 Cloverdale Sanitary District  
 Cloverdale Water District  
 Coburg, City of  
 Collins Products LLC  
 Colorado Lake Co-Op  
 Colton Water District  
 Columbia City, City of  
 Columbia Hills Homeowners Association  
 Columbia River PUD  
 Condon, City of  
 Coquille, City of  
 Corbett Water District  
 Cornelius, City of  
 Corvallis Waldorf School  
 Cottage Grove, City of  
 Country Club Water District  
 Country View Mobile Estates  
 Covanta Marion, Inc.  
 Cove Orchard Water Association  
 Cove, City of  
 Crater Lake National Park  
 Crescent Sanitary District  
 Crescent Water Supply & Improvement District  
 Creswell, City of  
 Crooked River Ranch Water Co-Op  
 Crystal Springs Water District  
 Culver, City of  
 Dallas, City of  
 Dayton, City of  
 Dayville, City of  
 Deer Creek Estates Water Association  
 Delphian School  
 Depoe Bay, City of  
 Deschutes Valley Water District  
 Detroit, City of  
 Dexter Oaks Mobile Home Park  
 Dexter Sanitary District  
 Diamond Peaks at Leisure Woods I&I  
 Dietz Airpark Water System  
 Donald, City of  
 Drain, City of  
 Drifter's MHP  
 Dry Creek Airpark HOA, Inc.  
 Dufur, City of  
 Dundee, City of  
 DWF Round Lake Utilities

Eagle Point, City of  
 East Yamhill Rural Water Company  
 Eastmont Water Company  
 Eastshore Water Improvement District  
 Echo, City of  
 Elgin, City of  
 Elkton, City of  
 Emerald Meadows HOA  
 Emerald Valley Wastewater Co.  
 Enterprise, City of  
 Estacada, City of  
 Estacada Mobile Village, Inc.  
 Eugene Mobile Village  
 Fairview Water District  
 Fairview, City of  
 Falcon Cove Beach Water District  
 Falcon Heights Water & Sewer District  
 Fall Creek Water District  
 Falls City, City of  
 Fern Ridge School Dist. 28J-10  
 Fern Valley Estates Improvement Dist  
 Fernridge Mobile Estates  
 Fir Grove HOA  
 Fir View Water Company  
 Fishhawk Lake Recreation Club, Inc.  
 Florence, City of  
 Forest Park Mobile Village  
 Fossil, City of  
 Garden Valley Water Association  
 Garibaldi, City of  
 Gaston, City of  
 Gates, City of  
 Gearhart, City of  
 Georgia Pacific-Wauna  
 Gervais, City of  
 Gilchrist Water Co., LLC  
 Gladstone, City of  
 Glendale, City of  
 Gleneden Sanitary District  
 Glenmorrie Co-op Association  
 Glide Water Association  
 Goble Water Association  
 Gold Beach, City of  
 Gold Hill, City of  
 Government Camp Water Company  
 Grand Prairie Water Supply Company  
 Grand Ronde Community Water Association  
 Grand Ronde Sanitary District  
 Grants Pass, City of  
 Grass Valley, City of  
 Green Area Water & Sanitary Authority  
 Green Oaks Park  
 Haines, City of  
 Halfway, City of  
 Hall's Trailer Court  
 Halsey, City of  
 Harbor Water PUD  
 Harrisburg, City of  
 Hebo Joint Water & Sanitary Authority  
 Heceta Water PUD  
 Helix, City of  
 Heppner, City of  
 Hermiston, City of  
 Hidden Valley Improvement District  
 High Lostine Owners Association  
 Highland Subdivision Water District

Hiland Water Corporation  
 Hillsboro, City of  
 Hines, City of  
 Hood River, City of  
 Hopewell Water Co.  
 Hubbard, City of  
 Hunnell Hills Community Water System  
 Huntington, City of  
 Ice Fountain Water District  
 Idanha, City of  
 Idleway Improvement District, Inc.  
 Imbler, City of  
 Independence, City of  
 Indian Meadow Water Company  
 Inn at Otter Crest  
 Interlachen Water PUD  
 Ione, City of  
 Irrigon, City of  
 Island City, City of  
 Jackson County Parks  
 Jacksonville, City of  
 Jasper Knolls Water District  
 Jewell School District  
 John Day Water District  
 John Day, City of  
 Johnson Creek Water Services Company  
 Joseph, City of  
 Junction City, City of  
 Keizer, City of  
 Kellogg Springs Camp  
 Kelly's Brighton Marina, LLC  
 Kelso Water Association  
 Keno Water Company, Inc.  
 K-GB-LB Water District  
 Kilchis Water District  
 Kingswood Heights Water Association  
 Klamath Falls, City of  
 Klippel Water System  
 Knappa Water Association  
 Knoll Terrace Park  
 L.A. Water Cooperative  
 La Pine, City of  
 Labish Village Water Commission  
 Lady Creek Water System  
 Lafayette, City of  
 Laidlaw Water District  
 Lake Creek Lodge  
 Lake Grove Water District  
 Lake of the Woods Resort, LLC.  
 Lake Oswego, City of  
 Lakeside Water District  
 Lakeside, City of  
 Lakeview, Town of  
 Lakewood Homeowner's, Inc.  
 Lamb Weston  
 Lamontai Improvement District  
 Lamplighter Water Association  
 Lane County Parks  
 Langlois Water District  
 Laurelwood Water User's Co-op  
 Lawrence Subdivision Water Assn., Inc  
 Lawson Acres Water Assoc.  
 Lebanon, City of  
 Lexington, Town of  
 Lincoln City, City of  
 Little Beaver School, Inc.  
 London Water Co-op





# MEMBERS



Long Creek, City of  
 Lonza Bend Inc.  
 Lostine, City of  
 Lowell, City of  
 Luckiamute Domestic Water Co-op  
 Lusted Water District  
 Lyons-Mehama Water District  
 Madras, City of  
 Madrone Hill Mobile Home Park  
 Madsen Springs Water Assn.  
 Malin, City of  
 Manzanita, City of  
 Mapleton Water District  
 Maupin, City of  
 McKay Acres Improvement District  
 McKenzie Palisades Water  
 McMinnville Water & Light  
 McNulty Water PUD  
 Merrill, City of  
 Metolius Meadows Prop. Owners Assn.  
 Metolius, City of  
 Midland Water Association  
 Mill City, City of  
 Milo Adventist Academy  
 Minikahda Water District, Inc.  
 Mitchell, City of  
 Molalla, City of  
 Monmouth, City of  
 Monroe, City of  
 Monument, City of  
 Moro, City of  
 Morrow Commission, Port of  
 Mossy Brae Water District  
 Mt. Angel Abbey  
 Mt. Angel, City of  
 Mt. Ashland  
 Mt. Bachelor, Inc.  
 Mt. Shadows HOA  
 Mt. Vernon, City of  
 Mulino Water Dist. #23  
 Myrtle Creek, City of  
 Myrtle Point, City of  
 Nantucket Shores Water Company  
 NeahKahNie Water District  
 Nehalem, City of  
 Nesika Beach-Ophir Water District  
 Neskowin Regional Sanitary Authority  
 Neskowin Regional Water District  
 Netarts Water District  
 Netarts-Oceanside Sanitary Dist.  
 Newberg, City of  
 Newport, City of  
 North Corvallis Mobile Home Park  
 North Hill Water Corporation  
 North Powder, City of  
 Northwest Newberg Water Association  
 Nyssa, City of  
 Oak Lodge Water District  
 Oakland, City of  
 Oakridge, City of  
 Oakwood Water Systems, Inc.  
 Oceanside Water District  
 Ochoco West Water & Sanitary Authority  
 Odell Sanitary District  
 Olney-Walluski Water Association  
 OPRD Main Office - Salem  
 Orchard Heights Water Association  
 Oregon Cascade RV Co-op.  
 Oregon Shores Beach Club, Inc.  
 Oregon Shores II  
 Oregon Water Utilities-Cline Butte  
 Oregon Water Utilities-Mtn. Lakes  
 Oregon Water Wonderland II Sanitary District  
 Orient Drive Mobile Estates, LLC  
 Otter Rock Water District  
 Pacific High School  
 Paisley, City of  
 Paradise/Rogue Meadow WS  
 Parkdale Water Company, Inc.  
 Perrydale Domestic Water Association  
 Philomath, City of  
 Phoenix, City of  
 Pilot Rock, City of  
 Pine Grove Water District  
 Pioneer Park Water Co-op  
 Pioneer Village Water Company, Inc.  
 Polehn Heights Water Association  
 Ponderosa Pines Water Company  
 Port Orford, City of  
 Port of Columbia County  
 Power City Water Co-op  
 Powers, City of  
 Prairie City, City of  
 Prineville, City of  
 Quincy Water Association  
 Rainier, City of  
 Red Hills Estates HOA  
 Redmond, City of  
 Redwood Water Service, Inc.  
 Reeder Ranch, Inc.  
 Reedsport, City of  
 Reehers Homestead, Inc.  
 Rhododendron Water Association  
 Richland, City of  
 Rickreall Community Water Association  
 Riddle, City of  
 Rieth Water & Sanitary District  
 Rimrock West Improvement District  
 River Meadows Improvement District  
 River Point Farms, LLC  
 Riverbend-Riverbank Water District  
 Rivergrove Water District  
 Riverside Water District  
 Roats Water System, Inc.  
 Rock Creek Water District  
 Rockaway Beach, City of  
 Rockwood Water PUD  
 Rocky Pointe Marina  
 Rogue Community College  
 Rogue Lea Estates MHP LLC  
 Rogue River, City of  
 Rogue River - Siskiyou National Forest  
 Roseburg Forest Products Company  
 Round Lake Water Utilities  
 Rufus, City of  
 Salem, City of  
 Salishan Sanitary District  
 Salmon Valley Water Company  
 Sandy, City of  
 Scappoose, City of  
 Scio, City of  
 Scotts Mills, City of  
 Scrael Hill Water Co-op  
 Seal Rock Water District  
 Seaside, City of  
 Seneca, City of  
 Shadow Hills Park Water Cooperative  
 Shangri-La Water District  
 Shelley Road Crest Acres W.D.  
 Sheridan, City of  
 Sherwood, City of  
 Siletz Community Water System  
 Siletz, City of  
 Silver Falls School District 4J  
 Silver Valley Water District  
 Silverton, City of  
 Sisters, City of  
 Skylane Farm  
 Skyview Acres Water Company  
 Sodaville, City of  
 South Fork Water Board  
 South Hills Water System, Inc.  
 South Suburban Sanitary District  
 South Umpqua Water Assn.  
 Southview Improvement District  
 Southwood Park Water District  
 Spirit Mountain Gaming, Inc.  
 Sportsman's Park Water Association  
 Spray, City of  
 Springwater Estates HOA  
 St. Paul, City of  
 Staffordshire Water System, Inc.  
 Stahlman Summer Homes  
 Stanfield, City of  
 Star Satellite Improvement District  
 Stayton, City of  
 Steeves Mobile City  
 Storlie Water Company Inc.  
 Sublimity, City of  
 Suburban East Salem Water District  
 Sumpter, City of  
 Sun Mountain Water System  
 Sunny Acres Water Co.  
 Sunridge Estates  
 Sunrise Water Authority  
 Sunriver Water LLC/Sunriver Utilities  
 Sunset Acres Water Company  
 Sunset Hills Domestic Water Assn.  
 Sunset Lake RV Park  
 Sunset Water Systems, Inc.  
 Sunshine Village Water Association  
 Sutherlin, City of  
 SW Lincoln County Water PUD  
 Sweet Home, City of  
 Talent, City of  
 Terrace Mobile Plaza  
 Terrebonne Domestic Water District  
 The Dalles, City of  
 Three Rivers School District  
 Tierra Del Mar Water Company  
 Tigard, City of  
 Tillamook Bay, Port of  
 Tillamook County Creamery Association  
 Tillamook, City of  
 Timber Water Association  
 Toledo, City of  
 Tollgate Water Company  
 Tone Water  
 Tooley Water District  
 Trailer Park Village  
 Trappist Abbey  
 Tri City Water & Sanitary Authority  
 Troutdale, City of  
 Tualatin Valley Water District  
 Tualatin, City of  
 Turner, City of  
 Twin Island Community Water  
 Twin Rocks Sanitary District  
 Tygh Valley Water District  
 Ukiah, City of  
 Umatilla, City of  
 Umatilla Indian Conf. Tribes Reservation  
 Umpqua Basin Water Assn.  
 Umpqua Indian Utility Co-op  
 Union, City of  
 Vale, City of  
 Valley View Water Co-op  
 Valley View Water District  
 Valley Vista Estates Water Improv. Dist.  
 Veneta, City of  
 Vernonia, City of  
 VIDA-LEA Community Co-op  
 Waldport, City of  
 Wallowa Lake Co. Service District  
 Wallowa, City of  
 Warm Springs Conf. Tribes Reservation of OR  
 Warren Water Association  
 Warrenton, City of  
 Wasco, City of  
 Water Wonderland Improvement District  
 Wedderburn Sanitary District  
 Weiss Estates Water System  
 Welches Water Company  
 Weldon Mobile Home Park  
 West Hills Water Company  
 West Linn, City of  
 West Slope Water District  
 Western Heights Water Association  
 Westfir, City of  
 Weston, City of  
 Westport Water Association  
 Westridge HOA, LLC.  
 Westridge Water District  
 Westwind  
 Wheeler, City of  
 Wickiup Water District  
 Willamette Water Company  
 Willamina, City of  
 Wilsonville, City of  
 Winchester Bay Sanitary  
 Wi-Ne-Ma Christian Camp, Inc.  
 Winston-Dillard Water District  
 Wood Village, City of  
 Woodburn, City of  
 Yachats, City of  
 Yamhill, City of  
 Yoncalla, City of  
 Young Life  
 Young's River Lewis & Clark WD  
 Zig Zag Water Cooperative, Inc.

# WELCOME, NEW MEMBERS!

## Associate Members

AMAROK  
 CUES, Inc.  
 Inland Environmental Resources  
 Silversmith Data  
 SWS Equipment  
 US Saws  
 USP Technologies

## Individual Members

Dale Anderson  
 Alistair Andre  
 Michael Atchley  
 Sandy "Rex" Benzel  
 Brian Bither  
 Dustin Brigham  
 Joshua Brown  
 Scott Carroll  
 Neal Conley  
 Barbara Connelly  
 Tyler Crichton  
 Retha Fox  
 Dan Hammond  
 Nicholas Henris

Dwight Holmes  
 Casey Horn  
 Aaron Hughes  
 John Hunt  
 Kevin James  
 Shiloh Joers  
 D. Troy Kemper

John Kemper  
 Nicole Morris  
 Jeff Pearson  
 Ron Polach  
 Easton Stalker  
 Ethan Scott  
 Stuart Sedvig

## INDIVIDUAL MEMBERS

Aguilera, Nicolas	Ceballos, Oscar	Freel, Milton E.	Hubbard, Tom	Lane, Brian	Percy, Patrick	Steidler, Matthew B.
Allison, Danny	Chipman, Kenneth	Furnish, Allen	Hubbell, Lillian	Leach, Randall	Perry, Gary	Stirling, Ethan
Allred, James	Christensen, Matthew	Gallino, Joseph	Huebner, Drew	Lee, Jon	Peterson, Phillip	Sundstrom, Daniel
Alvarado, Damian	Clark, Jamie	Gasky, Harvey	Huff, Zach	Leon, Gary	Pino, Patricio	Tecmire, Timothy
Anderson, Dale	Clark, Joshua	Gates, Andrew	Hughes, James	Littrell, Noah	Polach, Ron	Terrusa, David
Anderson, Dylan	Clement, Tony	Gentry, Mike	Hume, John	Lockard, Darrel	Powers, Ryan	Thayer, Bradley
Andre, Alistair	Clifford, Jason	Gerhard, Nathan	Hunt, Andrew	Lueckenotte, Dustin	Renhard, Chad	Thompson, Daniel J.
Anthony, Joe	Clingman, Amy	Gil, Riley	Hunt, Jeff	MacCarthy, Steven	Richards, Paul	Tibbets, Taylor
Arrera, Chuck	Close, Greg	Gonzalez, Jeremy	Hunt, John	Malone, Pamela	Richardson, Silas	Tupper, Sean
Atchley, Michael	Cole, Michael	Gott, Craig	Hunter, Ryan	Marshall, Chad	Robinson, Rob	Uhrich, William J.
Baldwin-Garcia, Daniel	Conley, Neal	Graue, Nick	Jacob, David	Marshall, John	Rush, Jared	Unger, Benjamin
Barnes, Chase	Connelly, Barbara	Greene, Michael	Jacops, Scott	Martin, Marcus	Sabastian, Permor A.	VonPinnon, Michael
Bauer, Kyle	Conyac, Jeremy	Grimstad, Erik	James, William	Martin, Wyatt	Sabia, Stephen	Vorpahl, Mike
Bateman, William	Cook, Shelby	Halverson, Bruce	Jarvis, Joshua	May, Adam	Sanders, Tim	Vos, Joe
Bazan, Giovanni	Cooper, Mark	Hamil, Michael	Joers, Shiloh	McClinton, Zachary	Saubert, Terry W.	Wabschall, Aaron
Bechler, Joel	Crouse, Kenneth	Hamilton, Howard	Johnson, Grady	McMullen, Ryan	Schaafsma, Eric	Wabschall, Steve
Bennington, James	Croy, Huntyr	Hamilton, Hunter	Johnson, Tim	Meskill, Garrett	Schroder, Michael C.	Wahle, Lynn
Benzel, Sandy	Crum, Dale	Hamilton, Megan	Jones, Brent	Miranda, Michelle	Schuening, Scott	Walley, James
Bernal, Antonio	DeHaan, Josh	Hand, Eric	Jones, Robert	Moloso, Christopher	Scott, Ethan	Walsh, Tom
Bither, Brian	Doss, Chris	Hanks, Kevin	Jones, Uriah	Moretti, Garrett	Scott, Keri	Ward, Kyle
Blackwelder, Brice	Dubisar, Austin	Haring, Joshua	Jordan, Michael	Neal, David	Sears, Ronelle	Warren, Brian
Bodner, Jerney	Dupay, Dustin	Hartman, Zack	Judah, Dave	Nelson, Kristen	Sedvig, Stuart	Watson, Samuel
Bohmker, Tim	Eddy, Brandon	Hartsell, Branch	Nelson, Ron	Nelson, Ron	Sewall, Andrew	White, Jacob
Boyles, Blake	Elder, Dave	Hauer, Hunter	Nielsen, Benjamin	Nielsen, Benjamin	Short, Jason	Whitten, Kevin
Branson, Neil	Elliott, Gary	Hawkins, Michael	Noreen, Tyler	Noreen, Tyler	Skaggs, Eric	Wiese, Michael
Bridges, Dylan	Emmel, Triston	Henris, Nicholas	Normandin, Matt	Normandin, Matt	Skaggs, Jesse	Williams, Lorin
Brigham, Dustin	Falk, Tim	Henry, Robert	Novac, Samuel	Novac, Samuel	Smallman, Mike	Williams, Scott
Brown, Joshua	Faulkner, Dan	Hensley, Daryly	Nugent, Brett	Nugent, Brett	Smith, Conrail	Winterton, Robbie
Brown, Rick	Fery, Michael	Hermansen, Dave	Oliver-Powers, Jesse	Oliver-Powers, Jesse	Smith, Joseph Sr.	Witmer, Drew
Burnett, Cory	Finnegan, Brady	Hixson, Noah	Ortega, Shane	Ortega, Shane	Smith, Justin	Wolf, Trent
Buskirk, Jeff	Forrest, Dan	Hoeffler, Matthew	Ott, Mallory	Ott, Mallory	Smith, Larry	Woodward, Steve
Cable, Joe	Fowler, Brian	Hoffman, Robert	Palmer, Blakely	Palmer, Blakely	Springer, Rondi	
Calhoun, Christopher W.	Fox, Retha	Holmes, Dwight	Patton, Chris	Patton, Chris	Stalker, Easton	
Cameron, Zachary	Fraijo, Ashley	Houchin, Jeff	Pearson, Jeff	Pearson, Jeff	Stark, Chris	
Cardwell, Adam	Franklin, William H.	Howard, Richard	Pedersen, Joshua	Pedersen, Joshua	Statchwick, Jeff	
Carroll, Scott	Free, Derek	Howell, Roy A.			Statham, Lee	

## ASSOCIATE MEMBERS

4B Engineering & Consulting	Clow Valve Company	Harrang Long Gary Rudnick PC	One.7, Inc.	Silversmith Data
A.Y. McDonald MFG. Co.	CoBank	HD Fowler Company, Inc.	Optimal Control Systems	Smart Earth Technologies
Adkins Engineering & Surveying	Columbia Laboratories	Hollabaugh Brothers & Associates	Oregon Meter Repair & Water Solutions	Smith & Loveless Inc.
Advanced Control Systems	Consolidated Supply Co.	Hose Solutions	Oregon Public Utility Commission	Special Districts Assn of Oregon
Aegion-Insituform Technologies, LLC	CORE & MAIN	Hurley Engineering Company	Orenco Systems	SWS Equipment
AKTIVOV Asset Management	Correct Equipment, Inc.	Hydra-Stop	Owen Equipment Company	The Automation Group
Alpha Guardian Networks	CUES, Inc.	HydroCorp	Owens Pump & Equipment	The Ford Meter Box Co., Inc.
AMAROK	Ditch Witch West	HYMAX by Mueller	PACE Engineers, Inc.	Thompson McLean Assoc.
American AVK Company	Diversified Construction and Consulting, LLC	InfoSense, Inc.	Pacific NW Sales	TMG Services
American Flow Control	DN Tanks	Inland Environmental Recourses	Perma-Patch, LLC	Trade Tool
American Leak Detection	Drinking Water Providers Partnership	Instrument Technology Corporation	Pittsburg Tank & Tower Co.	Treatment Equipment Company
Anderson Perry & Associates	Duke's Root Control	Kasco Marine	Prestige Worldwide Technologies, LLC	Tripac
Aqualitec Corp.	Edge Analytical Laboratories	Kennedy/M&H Valve	PumpTech Inc	Umpqua Research Co.
Backflow Management, Inc. (BMI)	EJ	Kleen Tides, LLC	Puttman Infrastructure, Inc.	Underground Tech.
Bainbridge Associates, Inc	Energy Trust of Oregon	Lakeside Industries/EZ Street	RDO Equipment	USABluebook
Baker Silo, LLC.	Enviro-Clean Equipment, Inc.	League of Oregon Cities	Reiner Pump	US Saws
Bancorp Insurance	Ferguson Enterprises	Legacy Power Systems	RJM Company	USP Technologies
Baseform	FloHawks	Lesman Instrument Company	Romac Industries, Inc.	Waterlab Corp
BioLynceus, LLC	Frank J. Martin Company	Master Meter, Inc.	Romtec Utilities, Inc.	Western Systems
Business Oregon Development Dept.	Frontier Precision, Inc.	Metolius Engineering LLC	Schneider Water Services	Western Water Works Supply, Co.
Cascade Columbia Distribution Co.	Furrow Pump, Inc.	Metron Farmer	Schroeder Law Offices, PC	Whitney Equipment Company, Inc
Cascade Waterworks	G.T. Gordon & Associates, Inc.	Morrison-Maierle	Seattle Pump & Equipment Co.	Wm H. Reilly & Co.
CIMCO-GC Systems, Inc.	General Pacific, Inc.	Mueller Company	Sensus USA	Xylem, Flygt Products
CIMCO Sales and Marketing	Goble Sampson Associates	Neptune Technology Group	SHN Consulting Engineers & Geologists	Zenner USA
Cleanwater1	Granich Engineered Products	Northstar Chemical Inc.		
	Hamsco Filtration Products	Numberg Scientific		
		NW Hydrovac		

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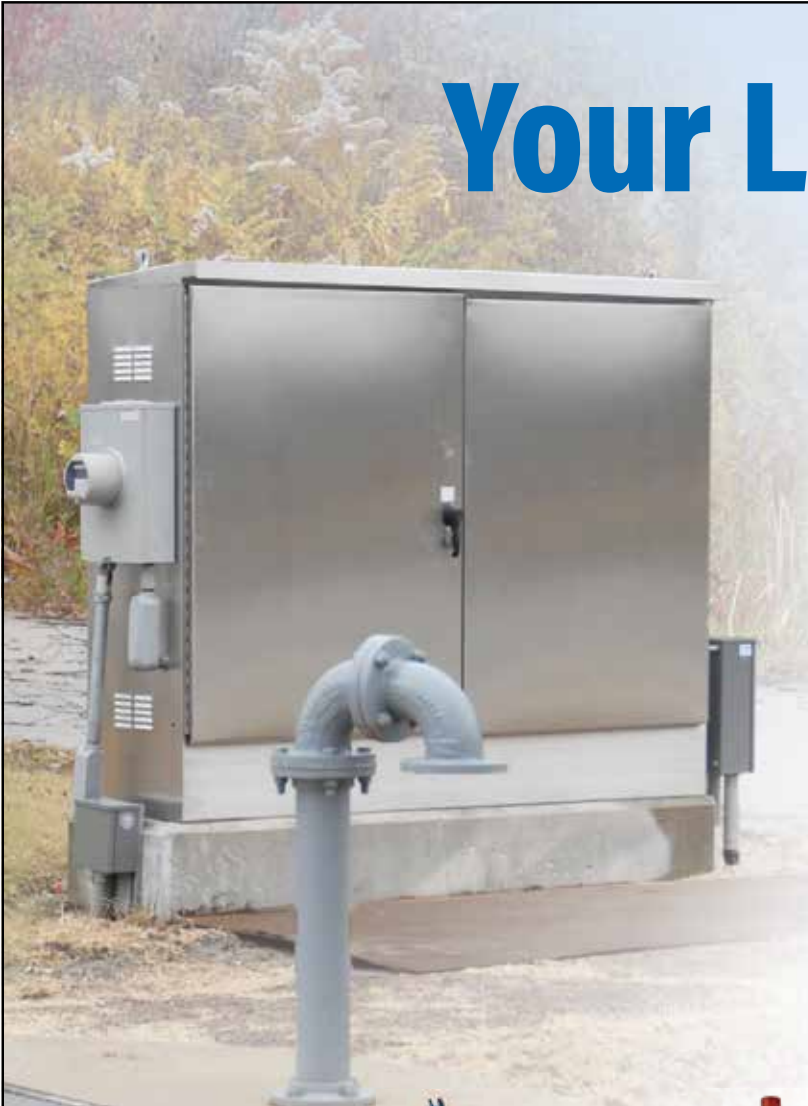
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