



# H<sub>2</sub>Oregon

Winter 2017  
Vol. 39, No. 1

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**A publication of Oregon Association of Water Utilities**  
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Winter 2017  
Vol. 39, No. 1

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Mt. Hood, Oregon

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*OAWU's mission is to provide service, support and solutions for Oregon water & wastewater utilities to meet the challenges of today & tomorrow.*

Oregon Association of Water Utilities



# Ten Things About Small Water Utilities

*Jason Green, Executive Director*



There have been two recent articles in USA Today and the Oregon Statesman Journal criticizing small water utilities. National Rural Water Association (NRWA) and Texas Rural Water Association (TRWA) both have published releases to help educate and counter some of the press negativity. We greatly value and respect our tireless and dedicated operators, system specialists, managers, and utility support personnel! You tie it all together, keep it running, keep it safe and plan for the future! Thank you! Please feel free to use and share all or any portion of the following. Credit to TRWA.

## Ten Things You Might Not Know About Rural Water

1. Ninety-four percent of water utilities nationwide are rural or small municipal systems serving populations of less than 10,000.
2. Rural water systems are held to the same quality standards as big city systems. They are regularly inspected and are required to resolve any violations in a timely fashion.
3. Rural water systems are operated and governed by people whose families drink the water every day and by people who are locally elected by their community.
4. Rural water operators are all professionally licensed and take the same training and licensing exams as operators at larger systems. All water operators are required to take continuing education to make sure they stay up-to-date on rules, regulations and requirements.
5. Water operators are public servants who take great pride in their work, which is to safeguard the public health of their communities. In rural areas, the operators know their community members, applying that personal knowledge of their neighbors to their daily work.
6. Every day, someone is watching for changes in complex water delivery systems, making second-to-second decisions about adding essential purifying chemicals, killing pathogens and keeping your family's water safe.
7. A large number of rural systems voluntarily participate in source water protection programs, which includes searching for potential sources of contamination and educating customers on practical steps they can take to protect their drinking water supply.
8. Rural water systems strive to provide high-quality drinking water while also being sensitive to disadvantaged communities and the affordability of water rates.
9. Most systems have a water loss program where they check for and fix leaks on a regular basis to minimize waste and costs, eliminate potential sources of contamination and mitigate drought conditions. Operators also check meters to make sure customers aren't losing water on their end.
10. Rural systems are part of a larger network. All 50 states are served by a rural water association (such as Oregon Association of Water Utilities). These associations provided over 75,000 onsite technical assistance visits and 150,000 hours of training to more than 37,000 utilities in the last year. Rural water association training and technical assistance covers every aspect of operating, managing and financing water and wastewater utilities. 💧



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# The Greatest Leaders

*by Mike Collier, Deputy Director/Sourcewater Specialist*



Here, I am not writing about “Great Leaders,” because that list could include people like Hitler, but rather am writing about the “Greatest Leaders.” Which I would consider people who are not just well known as leaders, but are also well respected worldwide for the type of leaders they were and what their leadership has accomplished. When thinking of leaders that made the most impact to our world we usually can come up with a fairly short list of top names, like: Martin Luther King Jr., George Washington, Jesus, Gandhi, or Nelson Mandela. Do you know what trait all of these famous leaders had in common? They all are well known for being self-sacrificial and these sacrifices were made for others, something that was beyond themselves.

What does it mean to sacrifice? Well, let us look at some of the examples from above: Martin Luther King Jr. (harassment of he and his family and he was eventually killed); George Washington (twice he left his home to serve the country in a position he did not want and gave up ultimate power, both when he left military leadership and when he finished his presidency); Jesus (humiliated, tortured and put to death); Gandhi (jailed several times, lived a frugal life, and eventually killed); and Nelson Mandela (about ¼ of his life was spent in prison and gave up power to do charitable work).

This idea of self-sacrifice can extend into other areas of our life as well. An example would be to be a good parent we must continually sacrifice our own desires, our own plans, and our selfish nature. We will give our lives for our children or our spouse, if it came down to it. So again, it comes down to giving of ourselves for someone else, or something else.

When we choose to sacrifice we give up a lot, potentially even our own lives. We lose our nice, safe, comfortable life in exchange for something that is trying, difficult, maybe even stressful. This seems to be against what we would think is natural (maybe that is why there are so few people who would make the list of the Greatest Leaders), why would someone ever give up all the best things for themselves in order to save others, or promote an idea? Maybe these leaders are born with a greater sense of compassionate concern for others and in their sacrifice they find joy in the benefit the sacrifice has had on others. A good example of this type of self-sacrificial leadership would be Mother Teresa, she gave up her time and life to help those in poverty around the world.

It is their time, money, and energy that is given up in order to lead others. Willing to take the negative things that come to them because of the decisions they have made. When few others would be willing to take a stand and make the same decision if the same scenario were presented to them. When making decisions that do not benefit ourselves and go against what the majority want, or possibly what the powerful want, it is easy to find a situation where we get a lot of negative attention and minimal to no reward.

Think on these things, be willing to change, giving of ourselves for someone else and not expecting anything in return might just be what we need to make a better future. ♦





# Uncorked

by Scott Berry, Operations Manager

There are few things that make me come uncorked like the overuse of bottled water. Don't get me wrong, there are certainly valid reasons for bottled water consumption during emergencies and disasters. The difficult part for me is that I'm just not really sure who to get mad at.

I cringe when I read a press release from a well-managed public water utility who is trying to justify a rate increase to their customers. We don't even need to talk about the age-old debate of whether or not rates should be raised annually because that's not the issue. No matter how well-written, thoughtful, comprehensive, and reasonable the explanation is, someone is going to complain about even the smallest of rate increases.

The complainer will most likely be the person who doesn't think twice about paying 5 to 10 dollars per gallon for bottled water from a store. But that product is packaged in a light-weight, convenient plastic bottle. That person might feel a twinge of guilt, but he silently gives himself a pat on the back for recycling the bottle; probably unaware of the enormous use of resources that make that plastic bottle possible. The petroleum, the manufacturing, the bottling process, the labeling, and the shipping isn't even necessary. We could plan ahead and bring a reusable container and fill it at any number of places available to us.

I've been told that people like bottled water because they are afraid that cities' water sources are polluted. They are apparently unaware that municipal water supplies are by far the largest source for bottled water. Most water bottling plants simply run the water through a carbon filter to deactivate the chlorine; some use reverse osmosis to remove other unwanted taste and odor issues.

The United States is the world's largest consumer of bottled water. We drink almost 28 gallons per person each year; that's 2.5 billion gallons sold just here in the U.S. Americans say that water is more important than any other service: electricity, heat, internet, and cell phones. A recent survey by Xylem Inc. suggests that people would accept an 11% increase in rates to fix pipes and other water infrastructure to stop losing 2 trillion gallons of clean water every year. Nationwide, that would mean an additional \$5.4 billion annually to repair and replace our broken and leaking assets. That's four times the federal allocation for drinking water programs.

The bottled water producers must be much better at marketing than we are. The product that we provide is well-regulated, clean, safe, and a much better value. 💧

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# Change is Imperative

by Hans Schroeder, Circuit Rider

The day for a Circuit Rider can be ever changing. I lay in bed at night and prioritize my next day's schedule. As I wake up from a restful night of sleep I attack the day with excitement. I start the day as was planned and prioritized. The day starts with a "cold call" at a local system that extends nearly to lunch time, assisting with a water leak. Before I get back into my rig I am happy there is another pair of boots in the back to replace the muddy ones.

Then I head to the next system request an hour away. At 1 pm I arrive to visit with an Operations Specialist who wants to take me to a work site where a pump company is trying to diagnose why their production had greatly reduced in the last 2 months. Meanwhile, my phone rings and another Operations Specialist is in a panic due to a bad sample. I walk him through the proper procedures and then a bump call comes in from OHA. I finish my call with the Operations Specialist and then return the call to OHA. Only to find out that an operator has quit and they are asking me if I could assist the Mayor to pull samples. Plans have now changed as scheduled.

I get off the phone and continue the meeting with the pump company and the issue at hand. As I leave the job site I contact the Mayor and let him know that I'll meet him in an hour. Samples are taken and I explain to the Mayor where to turn in the sample. Ok, now back on track to make another system call. It's now closing in on 3pm. I call to let the Operations Specialist know that I'll be there shortly. No answer. So I then text him. He replies that he's on his way to the emergency room. His son had smashed his finger in a car door. But, he'd like for me to still come by to visit about rebuilding a chlorine pump.

As I roll into town I receive a text to meet at his house. "We can tear into the chlorine pump in the garage while my wife prepares us some supper" he says. I was appreciative of the hospitality, but feel like I am intruding. However, I quickly realize it is important to this operator to repair the chlorine pump even though his poor son has a terrible throbbing finger. Pump got rebuilt. I received a bellyful of wonderful lasagna and humbly leave after a great visit over the family's supper table.

Off to find a motel so that I can relax and look over my emails and texts that have been neglected. As I read the texts I learn that I have the neighbor's horses in our yard at home. My wife has been texting and calling wanting to know what to do with these animals. I call home to find out that both wife and daughter resolved the issue, which had occurred hours ago. I then read through the emails and reply to the ones needing an answer. It's 9 pm and I shoot my wife a quick text wishing her a good night. I then shower, climb into bed and relive the day I had and also start planning my next day. Learning how to prioritize and also preparing for change is imperative as to how I handle the curveballs thrown at my way. As a Circuit Rider, no two days are the same.

A great book to read that deals with how to handle change is *Who Moved My Cheese?* by Spencer Johnson, M.D. 🍀



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# Future Industrial Survey

by Jeff Crowther, Wastewater Technician



The Industrial Survey component will be included with all future NPDES and WPCF permits issued by the State of Oregon no matter the size of the facility. Industrial surveys have been required in all major facilities for years, but have not been included in the minor permits unless issues were noted.

Depending on your communities' size this could be as simple as going to each business and completing the survey in person. For those a little larger, it may require a mailing with follow-up inspections. The main point is that once it is included in your permit it is your facility's responsibility to complete the survey and maintain it to be in compliance.

On the facing page you'll find the DEQ fact sheet that spells out the requirements. If you need any assistance, please call OAWU at 503-837-1212. 🍏

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# Requirements

## Guidance for Conducting an Industrial User Survey

### What is the Industrial User Survey?

Industrial users of a publically owned treatment works (POTW) can have potential to: cause pass-through or interference of pollutants with the wastewater treatment system's treatment process, cause sludge contamination or pose a safety threat to workers at these systems. The Industrial User Survey is a mechanism by which POTWs identify and locate all industrial users subject to the state's industrial wastewater pretreatment program. Industrial users that are subject to categorical standards are considered Categorical Industrial Users (CIUs). Industrial users that are not CIUs, but have the potential to affect the POTW due to the size of the discharge and nature of the pollutants are considered significant industrial users (SIUs). The survey is used to develop a list of businesses in the POTW's service area that are CIUs or SIUs.

### Survey's objective

The survey's objective is to identify any industrial users whose discharge triggers the requirement to develop a pretreatment program. The survey also identifies all industrial users that have potential to cause pass-through or interference of pollutants with the wastewater treatment system's treatment process, cause sludge contamination or pose a safety threat to workers at these systems.



*Impact of untreated industrial WW discharges.*

### What are the regulatory requirements?

Chapter 40 of the Code of Federal Regulations, Part 403, requires federal, state and local government, industry and the public to implement national pretreatment standards to protect treatment systems and the public. Oregon DEQ is delegated by EPA to oversee pretreatment programs in the state.

The requirement to identify industrial users subject to pretreatment applies both to National Pollutant Discharge Elimination System and Water Pollution Control Facilities permittees of all sizes.

### Who needs to conduct the survey?

NPDES and WPCF permit holders are required to conduct an Industrial User Survey.

### How is the survey performed?

Before starting the survey, the POTW should review the legal authority available to them to direct businesses in their jurisdiction, and any contributing jurisdictions, to complete and submit the survey. This authority is usually obtained through the local sewer use ordinance.

Once legal authority is established, POTWs need to develop a list of industrial users through sources such as building permits, business license records, water billing records, sewer connection permits or property tax records. Once this initial list is compiled, the survey is conducted and industrial users are classified based on wastewater discharge characteristics. Complete DEQ guidance on conducting an industrial user survey is at <http://www.deq.state.or.us/wq/pretreatment/docs/guidance/IUSurveyGuidance.pdf>

### How do I report survey results?

Reporting requirements are identified in the POTW permits. If the POTW facility has already completed a baseline industrial user survey, it should provide survey results to DEQ as specified in the permit.

For Oregon's very small, largely residential permittees, DEQ will accept a letter from cities indicating no industrial dischargers are subject to pretreatment, explaining the basis for the determination. A sample letter attachment is provided at the bottom of next page.

### What happens to identified dischargers?

The presence of significant and categorical industrial users discharging wastewater to the publically owned treatment works facility triggers the requirement to develop a local pretreatment program and issue control

mechanisms. Upon discovering a CIU or SIU, the POTW should contact DEQ's Pretreatment Program for assistance.

Additional resources for completing the industrial user survey and program development information are at: <http://www.oracwa.org/cbpt-purpose.html>.

### How often is the survey updated?

Once a POTW completes its initial survey, it maintains the survey and makes it available for DEQ inspection. In addition, the treatment works must submit to DEQ an updated survey every five years. Facilities with an approved pretreatment program must update their inventory more frequently. They must also address industrial user survey requirements as specified in the permit.

### [Industrial User Survey Sample Letter for Publicly Owned Treatment Works](#)

For information on pretreatment programs, call 503-229-5586, Portland, or call toll-free in Oregon at 1-800-452-4011, ext. 5586. Hearing-impaired persons may call 711.

### Alternative formats

Alternative formats of this document can be made available. For more information call 503-229-5696, Portland, or call toll-free in Oregon at 1-800-452-4011, ext. 5696. Hearing-impaired persons may call 711.



### Industrial Pretreatment Program

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Fax: (503) 229-6037  
Contact: Genet Belete  
[www.oregon.gov/DEQ](http://www.oregon.gov/DEQ)

Last Updated: 2/20/15  
By: Genet Belete

# When to Repair or Replace Pipe

U.S. municipalities and water utilities are struggling to make upgrades due to budgetary restraints, even as their water and wastewater infrastructure is deteriorating. In the meantime, utilities make pipe repairs until a long-term solution can be financed and implemented. The question of when it makes the most financial sense to replace pipe versus repairing it is not a simple one to answer. The short-term costs of repairing pipe may seem like an attractive option to keep costs low, but at a certain point, repeated repairs aren't economical.

When does it make sense to repair pipe rather than to replace it? When it is time to replace, what can be done to ensure it's done properly and keep the project on time and on budget?

There are three major items to consider when thinking about whether to repair or replace pipe.

## Cost

At a certain point, the costs involved in making repeated repairs outweigh the costs to replace the pipe. This includes the cost of parts and expenses involved in closing up the work area once the repair is completed. If utility crews are repeatedly visiting the same section of pipe, this is the first clue that the pipe may need to be replaced. While a repair can solve the problem in the short term, there could be higher costs and service interruptions in the long term.

## Complaints

The reality is that customers can dictate when and what kind of response a utility will take when water or wastewater problems arise in their neighborhood. If service to homes and businesses is not reliable, customers are going to expect a solution that is dependable and minimizes interruption of their service.

## Data

It's impossible to make an informed choice, which could involve hundreds of thousands of dollars, without useful data. By keeping good records, carefully examining repair data and noticing trends, water utilities can make sound decisions about whether to repair or replace pipe.

It's never too late to start gathering data. Develop a system where information can be stored and easily recalled; data is only good if it can be accessed.

In the absence of data from the field, residences and businesses in the neighborhood can help give information on the history of water and wastewater pipe repairs in the area.

Whenever repairs are being made, there are six questions to ask to help gather information for future decisions on pipe repair or replacement: who, what, when, where, why and how?

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**by Doug Riseden**  
**Technical Support Manager, Krausz USA**

- **Who?** Who was making the repair?  
Who was there, and who did what?
- **What?** What was the issue?  
What actions were taken to make the repair?
- **When?** When was the repair made?  
Be accurate with day, date and time.
- **Where?** Where was the repair? How many times have crews been to this same location or close by?
- **Why?** Why is the pipe breaking? Was the break due to a one-time incident, such as a gas company boring into the ground and hitting the pipe, or is the cause the same each time? Factors that can be considered are external forces such as ground movement, trains or heavy traffic.
- **How was the repair made?**  
What parts and equipment were used to make the repair?  
How much did they cost? Were quality parts and good repair techniques used to fix the pipe?

When answers to these questions are recorded each time a repair is made, trends can be detected and it becomes possible to predict how likely it is that future repairs will be needed.

## How to Ensure Pipe Installation is Done Right

After reviewing the data and the costs involved, utilities can determine whether to move forward with replacing the pipe. Here are steps to ensure that new pipe installations are done properly while keeping the project on schedule and on budget.

### Form a strong construction committee

To ensure that the installation goes smoothly, you need to have a committee of people who can supervise and review the project from beginning to end.

Include the following people on your construction committee:

- at least one council member—this person is critical to communicating updates to the rest of council



- the municipality's finance officer
- the utility's lead engineer and their assistant
- the public works director and their assistant
- the project inspector (who might be supplied by the engineer)
- a customer

Bringing together the right people at the beginning of the project is especially critical so that everyone is on board with the plan. Follow up meetings should also occur whenever there is a change to the plan, and it's also a good idea to use email, Skype and other communication tools to keep everyone in the loop. Remember to be in contact with media and local officials, such as police, so the public at large can be aware of what is happening before and during construction.

### Stay in close contact with public works, engineers and inspectors

Public works or your utility should be the lead on your project since their crews will be tasked with maintaining the finished product. Ensure that they review the site and physically go out and walk around it. They should take photos and video before construction starts to help manage claims that could come up. This activity should continue along with daily written reports, especially when changes are made to the original plan.

Speak and consult with engineers as often as needed. You will want to have your inspector closely monitoring the project as these people know the rules and regulations regarding installations, and will help ensure the project gets approved upon completion.

### Choose good products and work with responsible contractors

Your utility will likely have specs on what you will accept and use in different situations. Make sure products have a great work history with the backing of other local professionals and your engineer.

It pays to use high quality products that are exceptionally durable, even in harsh conditions, and designed to prevent future pipe damage. Krausz products, such as the HYMAX, allow for repairs to maintain a flexible connection to prevent damage from post-installation ground shifts and temperature changes, protecting your investment over the long-term.

*continued on next page*

## When to Repair or Replace Pipe *continued*

There's a difference between the lowest responsible bidder and the lowest bidder. The lowest bidder will sometimes leave things out of their bid and come back with a change order which can dramatically increase the budget. When it comes to using the right contractor and parts, do your homework, and get references to avoid surprises.

### Have a realistic schedule

Make sure that your work schedule is fair to all of those involved. Customers will expect a project that adheres to a schedule that has the least effect on them. Your contractor will want a tight schedule so they can continue to their next job, and avoid penalties for not meeting the scheduled completion date. Be realistic and stay in close communication with all those involved in the project, especially when plans change during construction.

If all goes well, there should be no surprises. Contractors and engineers should walk away happy, and utility and customers should have a well-done project. Determining whether to repair or replace pipe is not an easy decision to make. It requires recording and analyzing data and costs, and close communication between customers, engineers, contractors, inspectors and the utility. It is hard work but the long-term benefit of reliable service will last for decades. 🍀

### ABOUT THE AUTHOR

*Doug Riseden is the Technical Support Manager for Krausz USA, and has worked in the public utility field for over 20 years. His extensive experience with water and wastewater repairs and operations includes working for municipalities and private contractors, and providing water services to the NATO-led security mission in Afghanistan as part of Operation Enduring Freedom.*



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# Taken for Granted

by Tim Tice, Projects Manager

Does anyone today purposefully slow down long enough to hear the ringing in their ears? Silence can be deafening to some who can't sit still. What level of harm do we do to ourselves by not slowing down to hear ourselves think? Taking a sixty second vacation, three to four times daily, has such a positive effect on a person, it should almost be mandatory.

Some simple items (often taken for granted) to consider if you wish to engage in a mini escape:

- The sun shining through the blinds
- A breeze drifting across your face
- Hot water during your shower
- The smell of fresh cut grass
- The delivery of a kind word by any means (telephone, e-mail, letter)
- A journey into a new world from a good book
- Doing a good deed for someone who will never know
- The first three seconds your head lays on the pillow (or cool underside of the pillow)

Embracing the good in each moment can be a daunting task, particularly if we feel there is not enough time. Why do we feel we should fill our time with something to do? A time for self-reflection are greatly under-rated. Finding time to absolutely do nothing has drastically been diminished since the era of personal electronics.

People should not be taken for granted. The person who makes us feel awkward, drives us crazy or someone we know nothing about, can also be the same person who needs a kind word, or a smile. You may have heard that loneliness is a form of poverty.

Many articles claim an employee is more productive when he or she breaks away from their tasks to get up and walk around. Two or three minutes of movement each hour will assist in relieving stress on the lower back, better circulate fresh oxygenated blood to the joints and possibly present a new view of the computer screen upon returning. In your minute journey around the office, contemplate those little things we take for granted. Take a moment and hear the music in the office next door, go outside and feel the breeze or sun on skin or possibly smell the blooms in the air. It is sure to put a smile on your face, and that alone can be contagious to a co-worker, friend or family member.

Performing a random act of kindness, takes a moment to consider others before ourselves, which aligns with not taking too many things for granted. A random act will release serotonin in the brain, and this neurochemical has a calming, anti-anxiety effect for both the presenter and recipient. It is also stated that someone observing a kind act also experiences an increase in serotonin ([www.undergroundhealthreporter.com](http://www.undergroundhealthreporter.com)). To purposefully engage in consideration of those little things we take for granted, and aligning that time with a thoughtful act, will certainly establish a mood that is transmitted to others.

*The best that life has to offer! ♦*



# TRAINING & EVENTS SCHEDULE

| Date        | Class Title  | Location    | CEU Information          | ESAC#, Fee/Free |
|-------------|--|-------------|--------------------------|-----------------|
| January 11  | Control Valves   | Newport     | 0.7 Water                | 2863 FREE       |
| January 18  | Math for Operators   | Salem       | 0.3 Water/Wastewater     | 3153 Fee        |
| January 18  | Pumps and Pumping  | Salem       | 0.4 Water/Wastewater     | 2862 Fee        |
| March 6     | Effective Utility Management                                 | Sunriver    | 0.6 Water/Wastewater     | 3348 FREE       |
| March 6-10  | 39 <sup>th</sup> Annual Management & Technical Conference    | Sunriver    | 2.4 Water/Wastewater     | 3348 Fee        |
| March 14    | Confined Space   | Eugene      | 0.3 Water/Wastewater     | 3151 Fee        |
| March 14-15 | Wastewater Treatment/Collections Certification Review        | Salem       | 0.6 Water/1.4 Wastewater | 2882 Fee        |
| April 4-5   | Water Treatment, Water Distribution Certification Review     | Salem       | 1.4 Water/0.7 Wastewater | 2787 Fee        |
| April 6     | Level 3,4 Water Treatment, Distribution & Filter Endorsement | Salem       | 0.6 Water/0.4 Wastewater | TBA Fee         |
| April 19    | Math for Operators   | Salem       | 0.3 Water/Wastewater     | 3153 Fee        |
| April 19    | Pumps and Pumping  | Salem       | 0.4 Water/Wastewater     | 2862 Fee        |
| April 25    | Math for Operators   | Springfield | 0.4 Water/Wastewater     | 2885 Fee        |
| April 25    | Source Water Protection Planning                             | Springfield | 0.3 Water                | 3152 Fee        |

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

## More Resources

|                              |   |
|------------------------------|---|
| Drinking Water Data Online   | <a href="https://yourwater.oregon.gov">https://yourwater.oregon.gov</a>   |
| Center for Health Protection | <a href="http://public.health.oregon.gov/PHD/Directory/Pages/Program.aspx?pid=4">http://public.health.oregon.gov/PHD/Directory/Pages/Program.aspx?pid=4</a>   |
| Drinking Water Services      | <a href="http://public.health.oregon.gov/PHD/Directory/Pages/Program.aspx?pid=58">http://public.health.oregon.gov/PHD/Directory/Pages/Program.aspx?pid=58</a> |

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

For more information on any class by OAWU, please contact the office at 503-837-1212, [office@oawu.net](mailto:office@oawu.net) or visit [www.oawu.net](http://www.oawu.net).



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# Quality

by Heather Davis, Administrative Assistant

How do you write an article? Please somebody, anybody, tell me how to do this. What is the perfect method, secret formula to writing; well, anything? What's the point in writing something if it's not going to be any good?

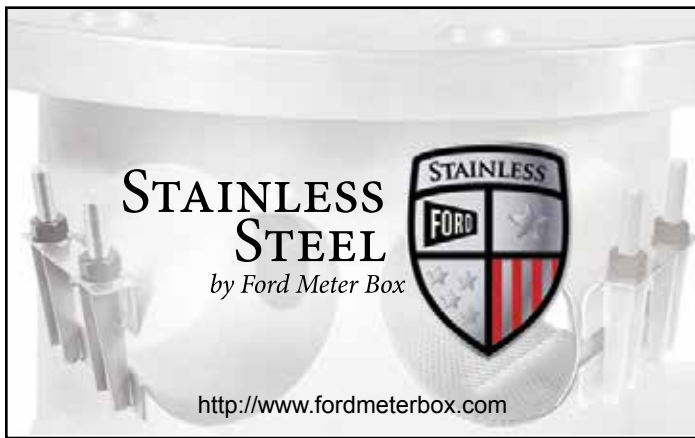
As you probably already know, we have four magazine issues a year. All of our guys have to write an article for each issue. I loved the fact that I was office staff, because that meant I did not have to write one. Mike Collier, our magazine guy, was always joking around about when we (the office staff) were going to get our articles turned in. We joked about how I could write about shoes and the new season's fashions, as long as it had to do with Water and Wastewater. We have a staff day about once a month, at the last meeting, Jason Green, our Executive Director, informed us that the office staff has to turn in an article by October 31st. What was my reaction you ask? RUN! I did not want to do this, being completely honest, I really did not want to do this. Why? I do have a couple of good reasons, I really do. First, I work in the office, I do not work in the field. My office space is out in the open, it's in the center of the entrance area. So sometimes the guys are around and they of course talk about work. I try to follow them, to understand what they are trying to say to each other...it's all Greek to me. The next thing you know I need Tylenol to take care of my headache. If I can't even understand most of what they are talking about, then what am I going to write about in a Water/Wastewater magazine? The second reason for not wanting to write an article, I was afraid that people would actually read it. Huh? Let me explain what I'm talking about. You are reading this article and you are taking time to think about what I'm saying. Maybe you are one of the lucky people and this does not bother you, but it's really scary to me.

So, what did I do? I wrote an article. It was about first impressions and I was telling the story about my job interview for OAWU. Some parts of my article were good, some parts were really, really bad. Please believe me, I'm not just saying that. It took me all of October to write that article about first impressions. Telling the story was the easy part, bringing it together to actually make it an article was, well, tiring. It didn't help that I did not like what I was writing. This and the two previous reasons I had for not wanting to write the article have a common theme, quality. Yes, some people may call me a perfectionist and at times I can be. I'm a woman, so it's already in my DNA. However, if I'm going to do something, I'm going to make sure it counts.


If by some miracle you are still reading this and if you haven't gotten anything from this article yet, then I hope you will in this last part. *Quality*: what does it mean to you? How much quality are you putting into your everyday life? Your job, your house, your friends, your spouse, your kids? The definition of Quality is: a high level of value or excellence. To me, quality is me doing the best of my ability. I could not turn my first article in to my boss because, to me, it wasn't worth anything. That's why I'm writing this article because, to me, this article is something that I consider to be good quality. It may sound strange to some people, but it makes a big difference to me. ♦



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# A Presidential Choice

*By Heath Cokeley, Programs Manager/Circuit Rider*



On October 14th, 1912, a would-be assassin's bullet struck a presidential candidate in the chest shortly before he was to give a 90-minute speech in Milwaukee Wisconsin. Assassination attempts were not entirely uncommon back then. Many times, when people think of a President being assassinated, Abraham Lincoln is the first name that comes to mind. While it is true that President Lincoln was struck down by a coward with a gun, he would not be the last. In fact, less than 20 years after Lincoln's death James A. Garfield would be brought down by an assassin's bullet only 4 months into his Presidency. It would take President Garfield 11 weeks to die from his wounds and many still feel he would have lived, if it was not for his doctors. Then 20 years after the death of President Garfield, President William McKinley would be assassinated as well, bringing into power his Vice President Theodore Roosevelt at the opening of the 20th century.

The reason I lay all this out is not to give a history lesson, though I personally find history very interesting especially when it comes to American history, to highlight some character traits that many American Presidents shared for the first 200 years of this country's existence. Those character traits are: strength, integrity, toughness, and grit (or whatever you want to call it). Not all Presidents in that time frame had it but a number of them did and I feel those individuals' actions stand out above the rest.

President Dwight Eisenhower, before his Presidency and when he was still the Supreme Commander of the Allied Expeditionary Forces, gave a speech after the D-day landing. In this speech he gave great praise to the soldiers, airmen, sailors, and the others of the Allied Expeditionary Forces for their great success on winning the day. But General Eisenhower had written another letter for that day, one in case the invasion was not successful. In that second letter General Eisenhower takes full responsibility for the failure of the landing at Normandy to gain a foothold with the statement, "If any blame or fault attaches to the attempt it is mine alone." Thankfully, he would not need to read that second letter, but what does it say of the leader who praises his soldiers for their success and claims responsibility for the failure? Once again I think this action is tied back to an astonishing level of personal strength and integrity.

When President McKinley was assassinated many people did not want the little known Vice President Theodore Roosevelt to take over, but he did and finished both that term and was elected to another. The real kicker was that after he had left office he was so disappointed with the current administration that, in 1912, he decided to run again and shortly before a campaign speech in Milwaukee Wisconsin he was struck by a would-be assassin's bullet. I am not saying I respect the man because of his politics, as I do not agree with everything he did as President (even though some things were good); I am not saying that I respect President Roosevelt because he was hit by an assassin's bullet, as that is a simple task to complete. I respect President Roosevelt because that day he not only kept the crowd from killing that would-be assassin until he could be turned over to the police, but he took his podium and gave his speech with a bullet lodged in his chest above his heart. A bullet that had ripped through the written speech he was to give along with his glasses case, both of which probably saved his life. That is a level of internal strength that I can respect regardless of an individual's political beliefs and my hope is that that kind of strength is something this country will, one day, see again—for I believe it is sorely needed. 💚



# QUIZ CORNER

1. Which of the following terms refers to excessive internal pressure, which may be several times the normal operating pressure and can seriously damage hydropneumatic tanks, valves, and the piping network?  
A. Air charge  
B. Flow rate pressure  
C. Water hammer  
D. Hydraulic charge
2. Which of the following should an operator investigate first when well pump and control problems occur?  
A. Depth of supply    B. Piping  
C. Electricity        D. Water leaks
3. What is the purpose of a check valve?  
A. Regulate the rate of flow through the discharge pipe  
B. Act as automatic shutoff valve when the pump stops  
C. Permit air to escape from the pipe  
D. Prevent clogging of the suction line
4. Which of the following duties should not be performed by a small system operator?  
A. Disinfect water mains  
B. Observe pump motors to detect unusual noises, vibrations or excessive heat  
C. Repair and overhaul chlorinators  
D. Wire pump, compressors and electrical components of the water system
5. What are the two most important safety concerns when entering a confined space?  
A. Corrosive chemicals and falls  
B. Bad odors and claustrophobia  
C. Extreme air temperatures and slippery surfaces  
D. Oxygen deficiency and hazardous gases
6. How many coliform samples are required per month for a water system serving a population between 25 and 100?  
A. 1        B. 2        C. 3        D. 4
7. Which one of the following is the most correct regarding the operation of a trickling filter?  
A. Three major components of a trickling filter are the media, the distributor arm, and the underdrain.  
B. Ponding occurs regularly on a trickling filter.  
C. You should allow the trickling filter media to dry out regularly.  
D. Trickling filters don't require good debris removal.
8. One acre foot of water is equal to how many gallons?  
A. 834,000 gallons  
B. 43,560 gallons  
C. 748,000 gallons  
D. 325,851 gallons
9. What is happening August 21, 2017?  
A. There will be a Total Solar Eclipse  
B. A Preconference for the Summer Classic will be held in Seaside  
C. Both A and B  
D. Neither A nor B
10. Cross Connection information is covered in what OARs?  
A. 333-061-0020 through 0036  
B. 333-061-0050 through 0065  
C. 333-061-0070 through 0074  
D. Cross Connection information is not covered in the OARs.
11. Construction Standards are covered in what OAR?  
A. 333-061-0036        B. 333-061-0050  
C. 333-061-0095        D. 333-061-0205

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# That's Just the Way It Is

*by Mark Russell, Office Manager*

By the time you read this article, the National Football League season will be three quarters over and the excitement of the Baseball World Series will be far from recent in your minds. But I would like to share with you some of my thoughts that surfaced during the baseball playoffs.

In our household, the sports fan is my wife. If there's college or professional games, international soccer (football) or the winter or summer Olympics, she will be sure to know what date/time they are on television. For me, I am content puttzying around out in the garage or sprucing up the flower beds and mowing the lawn. However, I really do enjoy Seahawks football and now maybe the Seattle Mariners, too. As you know, this past baseball season was all about the Chicago Cubs and their seventh game win at Wriggley Field in the World Series. I was particularly excited for Ben Zorbrist when, in the 10th inning, he hit a double just inside third base that scored pinch runner Albert Almora Jr. with the decisive run in an 8-7 victory that gave the Cubs their first World Series championship since 1908. The players hoisted Ben on their shoulders, he was their hero. When Zorbrist was awarded the World Series MVP (Most Valuable Player) he was nearly speechless, overjoyed and proud to receive the award.

Why do I share about this baseball game? Well, here's a story about a championship Pee Wee baseball game.

When our son, Gregg, was 6 years old he was on an intercity baseball team. He was an average player, played center outfield, could hit the ball, and get on base most of the time he was at bat. He enjoyed the outfield position because it was mostly safe from any serious action. In T-Ball, he missed a fly-ball once because he was busy picking daisies-but that was the only time a ball came his way all season.

Anyway, so here we are, at the end of the summer season, a perfect weather day, our team was the designated home team, and both teams had a perfect winning record, no losses. Of course this means that this is the first time the two teams had played, so we don't know the players. Like most Pee Wee teams, there are a couple really good players and a few not-so-good ones on each team. As the game progresses, it becomes very obvious that their pitcher is really consistent and throws fast balls right in the middle of the strike zone almost every pitch. A couple of runs are batted in for both sides. We are down to the final seventh inning and the game ends in a tie. Well, in this league, there are no extra innings, but the parents and the kids all want a winner.

After a brief discussion with the parents, including the kids, it is agreed to play one last inning. And of course, wouldn't you know it, their team gets two runs during their at bat. We are last up and have two runs in so the score is tied again. Our team is really pretty excited because we have a great chance to win the game. The bases are loaded, there are two outs. The pitcher is still pitching very well. My Gregg is next up to bat. Will he be the hero who wins the game?

Oh wait, let us backtrack to the beginning of the game. Did I tell you that in this league, the home team always provides the umpire? He/she is usually one of the parents. When our umpire isn't able to fulfill the role, guess who gets the lucky job? Me. Our routine umpire could not make this game, so I get to fill in again for him one last time. Now, back to the game. Score is tied. Bases are loaded. There are two outs. My son is up to bat. A base hit would win the game and the championship. First pitch, strike. Second pitch, ball. Third pitch, ball. Fourth pitch, Gregg swings, strike. Fifth pitch, ball. Full count, 3 balls and 2 strikes. Bases loaded. Tied game.



What was Gregg thinking? The same thing all of us think about under that pressure. *Can I hit the ball and win the game? Don't swing if the pitcher throws another ball and we win? If I strike out, we don't get to win the game because of me.*

What is the umpire thinking? The same things, but add to it. *If Gregg swings and misses, strike out, game over and still tied. If he hits the ball for a base hit, the third base runner scores and we win. If the pitcher throws a ball, it better clearly be a ball and not a strike, we win.*

What happened? The pitcher threw the ball right at the top of the strike zone. My son and all our team's parents thought it was clearly a ball. Their team and parents were relieved a small little bit that I called it a strike because they didn't lose. Now I can tell you that this umpire's name was dirt. Almost everyone was mad at me, yes my wife thought it was a ball too. You know, I would have loved for my son to have gotten the game winning RBI (run batted in). Maybe he would have gotten an MVP award and been so happy that game-winning season. But it didn't happen. Now, no one remembers that game. A couple

times over the years Gregg has reminded me how it was I who lost their championship game. Actually, maybe he too has forgotten it as not being so very important in the big picture of life. For me, I don't think I will ever forget. Looking back, I remember complimenting the pitcher for being really good as if that would encourage him to stay in the sport. I remember thinking how I would have been "mud" from the other team parents, if I would have called that last pitch a ball.

Where do we go with this? This year's last game of the World Series made me think back to my kid's championship game. Gregg was not the hero that got carried away on the shoulders of his teammates or experience any special award for exceptional sportsmanship. Like every final game, there is a team that loses. It's great and exciting for the winning team. I truly enjoyed watching the Chicago Cubs' reactions. For the losing team, there is sadness for what could have been. And that's just the way it is and life will go on. We'll hope to do better next year. For me, I was happy they didn't use me for umpiring any future games. Gregg did Pee Wee one more year and then eventually Junior High happened with new hopes and dreams. ♦



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# Lemon Blueberry Sour Cream Muffins

by Donna Bernt, Administrative/Financial Assistant

## INGREDIENTS

### *Topping:*

¼ cup light brown sugar  
¼ cup all-purpose flour  
2 tablespoons unsalted butter, softened  
1 teaspoon cinnamon

### *Muffins:*

1½ cups plus 1 tablespoon flour  
2 teaspoons baking powder  
¼ teaspoon baking soda  
½ teaspoon salt  
1 large egg  
¾ cup sugar  
1 tablespoon unsalted butter, melted  
1 rounded cup sour cream  
1 teaspoon pure vanilla extract  
1–1½ teaspoon finely grated lemon zest  
1 rounded cup frozen blueberries

## DIRECTIONS

1. Preheat oven to 375° F.

In a medium bowl, combine brown sugar, flour, butter, and cinnamon. Blend with fork. Refrigerate until ready to use.

2. Butter a 12-cup muffin pan.

In a medium bowl, whisk the 1½ cups flour with the baking powder, baking soda, and salt.

In a large bowl, use a handheld mixer to beat the egg at medium speed until frothy. Add the sugar and melted butter and beat for 1 minute. Beat in sour cream, vanilla, and lemon zest (to taste) until blended. Then, add dry ingredients and beat at low speed until almost blended.

Toss the blueberries with the remaining 1 tablespoon flour. Using a rubber spatula, fold the blueberries into the batter.

3. Fill the muffin cups ¾-full with batter and sprinkle with topping. Bake for 25 minutes or until a cake tester or knife inserted in the center of a muffin comes out clean. Remove muffins from the pan and let cool.

*Muffins can be stored in an airtight container for up to 3 days.*

*You can also keep them in the refrigerator. ♦*



### *Adapted from Food & Wine*

I added more lemon zest (the original contained just ¾ teaspoon) for more lemon flavor. The sour cream gives the muffins moisture and unique flavor. Here are some more tips:

- Add more cinnamon to the topping for stronger cinnamon flavor.
- If you have only unsalted butter, use ¼ teaspoon salt (instead of ½ tsp).
- Add chopped nuts for additional flavor and texture.

—Donna



## OAWU 2017 — System Member Scholarship Application

OAWU will be awarding two (2) scholarships for the Annual Management and Technical Conference in Sunriver 2017. These scholarships include registration, conference meals and social functions. Lodging and transportation will be the individual's responsibility. Award decision based upon membership and system need.

Please submit the application form below by January 23, 2017 to:

OAWU, 935 N. Main St. Independence, OR 97351, Attn: Scholarship 2017

Name of Applicant: \_\_\_\_\_

System: \_\_\_\_\_

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

Phone: (        ) \_\_\_\_\_ Email: \_\_\_\_\_

Reason applying for scholarship:

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## OAWU 2017 — College Student Scholarship Application

OAWU will be awarding two (2) scholarships for the Annual Management and Technical Conference in Sunriver 2017. These scholarships include registration, conference meals and social functions. Lodging and transportation will be the individual's responsibility. All applicants must be an active college student in water or wastewater. Submit a 500-word typed essay on why you would like to attend our conference and why you chose the water/wastewater industry.

Please submit the application form below by January 23, 2017 along with your essay and mail to:

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# OAWU's 2017 Annual Conference Awards



## Water operator of the year:

Based on exceptional accomplishments of an individual during 2016. Criteria for nominee:

1. Employer / System of nominee must be an OAWU member.
2. Employer / System must be in state compliance.
3. Minimum of two years employed with system.
4. Demonstrates leadership in dealing with daily utility operations and/or concerns.
5. Nominee must be State Certified.

---

## Wastewater operator of the year:

Based on exceptional accomplishments of an individual during 2016. Criteria for nominee:

1. Employer / System of nominee must be an OAWU member.
2. Employer / System must be in state compliance.
3. Minimum of two years employed with system.
4. Demonstrates leadership in dealing with daily utility operations and/or concerns.
5. Nominee must be State Certified.

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## Rookie operator of the year:

Based on exceptional accomplishments of an individual during 2016. Criteria for nominee:

1. Employer / System of nominee must be an OAWU member.
2. Employer / System must be in state compliance.
3. Minimum of one year employed with system.
4. Demonstrates leadership in dealing with daily utility operations and/or concerns.
5. Nominee must be State Certified.

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## Office Manager/Manager of the year:

Based on exceptional accomplishments of an individual during 2016. Criteria for nominee:

1. Employer / System of nominee must be an OAWU member.
2. Employer / System must be in state compliance.
3. Minimum of two years employed with system.
4. Demonstrates leadership in meeting office / system demands.

---

Nominee's full name: \_\_\_\_\_

Employer / system: \_\_\_\_\_

Nomination category:    ☐ Water    ☐ Wastewater    ☐ Rookie    ☐ Office Manager/Manager

Description of nominee's achievements and/or accomplishments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Please feel free to include copies of awards, certificates, support letters, etc.

Name of person making nomination: \_\_\_\_\_

System/company name: \_\_\_\_\_

System/company phone #: \_\_\_\_\_

Please return nomination form by Friday, February 3, 2017  
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935 N. Main Street, Independence, OR 97351-2505  
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| <input type="checkbox"/> Associate Member  | \$400.00                       |
| <input type="checkbox"/> Individual Member | \$75.00                        |

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 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  
 Modoc Point Sanitary District  
 Molalla, City of  
 Monmouth, City of  
 Monroe, City of  
 Monument, City of  
 Moro, City of  
 Mosier, City of  
 Mossy Brae Water District  
 Mt. Angel Abbey  
 Mt. Angel, City of  
 Mt. Ashland  
 Mt. Bachelor, Inc.  
 Mt. Shadows Homeowners Association  
 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 Plains, City of  
 North Powder, City of  
 Northwest Newberg Water Association  
 Nyssa, City of  
 Oak Lodge Water District  
 Oakland, City of  
 Oakridge, City of  
 Oaks Mobile Home Park  
 Oceanside Water District  
 Ochoco West Water & Sanitary Authority  
 Odell Sanitary District  
 Odell Water Company  
 Olney-Walluski Water Association  
 OPRD Main Office- Salem

Orchard Heights Water Association  
 Oregon Shores Beach Club, Inc.  
 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  
 Pete's Mt. Water Company, Inc.  
 Philomath, City of  
 Phoenix, City of  
 Pilot Rock, City of  
 Pine Grove Water Dist.  
 Pinecrest Water Company  
 Pioneer Park Water Co-op  
 Pioneer Village Water Company, Inc.  
 Pleasant Valley Water Company  
 Pleasant View Water Company  
 Polehn Heights Water Association, Inc.  
 Ponderosa Pines Water Company  
 Port of Morrow Commission  
 Port Orford, City of  
 Power City Water Co-op  
 Powers, City of  
 Prairie City, City of  
 Prineville, City of  
 Pristine Water Source, LLC  
 Quincy Water Association  
 Rainier, City of  
 Redmond, City of  
 Redwood Water Service, Inc.  
 Reeder Ranch, Inc.  
 Reedsport, City of  
 Rhododendron Water Association  
 Richland, City of  
 Rickreall Community Water Association  
 Riddle, City of  
 Rimrock West Improvement District  
 River Meadows Improvement District  
 River Point Farms, LLC  
 Riverbend-Riverbank Water District  
 Riverfront RV Park  
 Rivergrove Water District  
 Riverside Water District  
 Riverview Trailer Park  
 Roats Water System, Inc.  
 Roberts Creek Water District  
 Rock Creek Water District  
 Rockaway Beach, City of  
 Rocky Pointe Marina  
 Rogue Community College  
 Rogue Lea Estates MHP LLC  
 Rogue River, City of  
 Rogue River-Siskiyou National Forest  
 Roseburg Forest Products Co.  
 Round Lake Water Utilities  
 Rufus, City of  
 Running Y Utility Company  
 Salem, City of

Salem Keizer School Dist.  
 Salmon River Mobile Village  
 Sandy, City of  
 Scappoose, City of  
 Scio, City of  
 Scotts Mills, City of  
 Scrael Hill Water Co-op  
 Seal Rock Water District  
 Seneca, City of  
 Shadow Hills Park Cooperative Water Association  
 Shangri-La Water District  
 Sheridan, City of  
 Sherwood, City of  
 Siletz, City of  
 Silver Falls School District 4J  
 Silverton, City of  
 Sisters, City of  
 Skylane Farm  
 Skyview Acres Water Co-op  
 Sleepy Hollow Phase 1 Water  
 Sodaville, City of  
 South Fork Ranch Homeowners, Inc.  
 South Fork Water Board  
 South Hills Water System, Inc.  
 Southwest Lincoln County Water District  
 Southwood Park Water District  
 Spirit Mountain Gaming, Inc.  
 Spray, City of  
 Springwater Estates  
 Sportsman's Park Water  
 Squaw Creek Canyon Development  
 St. Paul, City of  
 Staffordshire Water System, Inc.  
 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  
 Sunridge Estates  
 Sunrise Water Authority  
 Sunriver Water LLC  
 Sunset Acres Water Improvement Co.  
 Sunset Lake RV Park  
 Sunset Water Systems, Inc.  
 Sunshine Village Water Association  
 Sutherlin, City of  
 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 Creamary Association  
 Tillamook, City of  
 Timber Water Association  
 Toledo, City of

Tollgate Water Co.  
 Tone Water  
 Trappist Abbey  
 Tri City Water & Sanitary Authority  
 Troutdale, City of  
 Tualatin Valley Water District  
 Turner, City of  
 Twin Rocks Sanitary District  
 Tygh Valley Water District  
 Ukiah, City of  
 Umatilla, City of  
 Umpqua Basin Water Assn.  
 Union, City of  
 Vale, City of  
 Valley View Water Co-op  
 Valley View Water District  
 Veneta, City of  
 Vernonia, City of  
 Vida-Lea Community Cooperative  
 VMWID  
 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  
 Welches Water Company  
 Weldon Mobile Home Park  
 West Hills Water Company  
 West Linn, City of  
 West Slope Water Dist.  
 West Yamhill Water Company  
 Western Heights Water Association  
 Westfir, City of  
 Weston, City of  
 Westport Water Association  
 Wheeler, City of  
 Whispering Pines #4  
 Wickiup Water District  
 Willamette Water Company  
 Willamina, City of  
 Wilson River Water District  
 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's Washington Family Ranch  
 Young's River Lewis & Clark W.D.  
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Everett Kyniston  
Larry Spellman  
Mark Asghari

CB Pacific  
City of Elgin  
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| Anderson, Frank    | Close, Greg        | Halverson, Bruce       | Leavy, Johnny     | Pendell, Keith        | Steele, Mark         |
| Anthony, Joe       | Cox, Hanna         | Handler, John          | Leeper, Clifford  | Perry, Richard        | Steidler, Matthew B. |
| Asghari, Mark      | Crook, Tyler       | Hanks, Kevin           | Leon, Gary        | Phillips, Brandon     | Strassner, Bob       |
| Ashenberger, Jacob | Dammeyer, Scott    | Hannen, Scot           | Lewis, Mark       | Pinson, James         | Tabrum, Walter       |
| Baker, Scott       | Daniel, Morgan     | Harrod, Ron            | Lund, James       | Porter, James         | Thayer, Bradley      |
| Bain, James        | Davis, Guy P.      | Hatcher, James         | Lyon, Nathan      | Powers, Ron D.        | Thiramoke, Warampa   |
| Barnes, Hogan      | Desroche, Ron      | Hathaway, Travis       | Madsen, Darrell   | Rader, Jonathan       | Thompson, Kamen      |
| Barnett, Brian     | Dillard, Bob       | Hawkins, David         | Maine, Mike       | Rettke, Tim           | Thompson, Matt       |
| Bartlett, Nathan   | Durfee, Kenneth C. | Hecox, Thomas          | Malley, Susan     | Risley, Michael       | Trusty, Cole         |
| Bathke, Vernon     | Elder, Dave        | Hildebrandt, Jamie     | Marshall, John    | Schmidt, Lonny        | Tupper, Sean         |
| Beauchemin, James  | Eells, Lannie      | Hodge, Pat             | McClenathan, Mike | Schmittle, William L. | Turner, Keith        |
| Bell, Ron          | Endicott, Philip   | Hubbard, Tom           | McFadden, Tim     | Schnell, Kent T.      | Uhrich, William      |
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| Blake, Mike        | Foster, Rob        | Jauron, Scott          | Meigs, Gilbert    | Sellers, Ricky        | Warrick, Logan       |
| Bock, Paul         | Fox, Donna J.      | Johanson, Grady        | Mergel, Kyle      | Sheppeard, Neal F.    | Wheatley, James      |
| Bradshaw, Dave     | Free, Derek        | Kash, Stella           | Merrell, Thomas   | Sherlock, Christopher | Whitlock, George     |
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| Brown, Jeff        | Gastineau, John    | Keene, Tyson           | Mooney, Ronald    | Simmons, Edward       | Williams, Benjamin   |
| Buckley, John      | Geiman, Dave       | Kelso, Josh            | Morgan, Daniel    | Simpson, Steve        | Wolford, Paul        |
| Burton, Howard     | Gibson, Travis     | King, Andy             | Morris, Brady S.  | Smith, Bobby          | Woodward, Steve      |
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| Caldwell, Kevin    | Ginter, Brian      | Kneaper, Jason         | Odell, Mark       | Smith, Larry          |                      |
| Calhoun, Richard   | Goodpasture, Joe   | Kuhnke, Joel           | Ohman, Laura      | Sollee, James         |                      |
| Cass, Bradley      | Gosser, Jeff       | Kyniston, Everett      | Overstreet, Joe   | Spellman, Larry       |                      |

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| Abbey Systems, Inc.               | Correct Equipment, Inc.            | Lakeside Industries/EZ Street     | Security Lines US                 |
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| American AVK Company              | DN Tanks                           | Master Meter, Inc.                | Somarakis Helix Elbow Piping, LLC |
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| Backflow Management, Inc. (BMI)   | Enviro-Clean Equipment, Inc.       | Neptune Technology Group          | Taylor Made Pump Stations         |
| Badger Meter Inc.                 | Ferguson Enterprises               | Northwest Pump & Equipment Co.    | The Automation Group              |
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| BergerABAM                        | GC Systems, Inc.                   | Owen Equipment Company            | Thompson Pipe Group - Flowtite    |
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| BMS Technologies                  | Georgia Pacific                    | PACE Engineers, Inc.              | Treatment Equipment Company       |
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| Ch2M Hill - Lebanon               | HD Supply Waterworks               | Public Works Supply               | Umpqua Research Co.               |
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| CIMCO Sales and Marketing         | Itron, Inc.                        | RH2 Engineering Inc.              | Waterlab Corp                     |
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