Fall 2022 Vol 44, No. 4

MARK YOUR CALENDAR

Spirit Mountain Casino Conference GRAND RONDE • NOV. 1–3, 2022

Annual End of Year Operators Conference HOOD RIVER, DECEMBER 12–15, 2022

A publication of Oregon Association of Water Utilities Read H₂Oregon online at www.oawu.net

Smart Solutions. Clean Water.



WANTED

Your photos and articles for inclusion in *H2Oregon*. OAWU requests your best photos of Oregon water scenery for our magazine covers and artwork!

Please mail your photo to our office. If we use your photo on the cover you will receive an official OAWU shirt and hat.

We are also seeking articles, clean jokes, Oregon trivia, letters and interesting stories.

Please send submissions (no more than two pages in length) to:

Oregon Association of Water Utilities

935 N. Main St. Independence, OR 97351 (503) 837-1212 Fax (503) 837-1213

Cover photo by Bruce Hemenway

CONTENTS «

Changes by Jason Green, Executive Director	
OAWU's Summer Classic 2022 in Seaside, Oregon	4-5
OAWU's Annual Golf Scramble	6
Wastewater Recycled by Keith Bedell, Wastewater Technician	
Why Did You Choose Wastewater? by Monty Norris, Wastewater Technician	
All Materials Locator by Bob Waller, Water Circuit Rider	10
Communication During Emergencies by Scott Berry, Operations Manager	12–13
Special Thanks to OAWU's 2022 Sponsors	13
System Surveys by Hans Schroeder, Circuit Rider	14–15
Nowhere! by Tim Tice, Projects Manager	12
Mentorship by Heath Cokeley, Program Manager/Circuit Rider	18
Why Forgive? by Mike Collier, Deputy Director/Source Water Specialist	20-2
Quiz Corner	23
Upcoming Training & Events	23
Requesting Public Records from ORWD by Schroeder Law Offices	24-25
Upcoming Conferences	2
Membership Application Form	29
Membership Roster	30–32

We Appreciate our Advertisers!

Please take a moment to view their ads.

Advanced Control Systems	22
Bancorp Insurance	25
BioLynceus	26
Backflow Management Inc. (BMI)	21
Core & Main	17
EJ	19
Ferguson Waterworks	21
H.D. Fowler	21
ITC	16
Lakeside Industries	27

Neptune	Inside Back Cover
Oregon DEQ	15
Owen Equipment	25
Pittsburg Tank & Tower	9
Putman Infrastructure	19
Special Districts Association of Ore	gon9
The Automation Group	Inside Front Cover
Underground Tech	11
USA BlueBook	Back Cover

Oregon Association of Water Utilities

935 N. Main St., Independence, OR 97351 Ph: (503) 837-1212 • Fax: (503) 837-1213

Notice: Oregon Association of Water Utilities invites you to prepare a short article about your water system or other topics which would be of interest to our readers. We also welcome articles from our associate members. The Publisher reserves the right to reject or edit any articles received for publication. Statements of fact and opinion are the responsibility of the authors alone and do not imply an opinion on the part of OAWU.

Send your articles with full color photographs, in digital format if possible, to the address listed above.

OAWU has the right to reject any advertising deemed unsuitable for the OAWU publication. Acceptance of advertising by OAWU does not constitute endorsement of the advertiser, its products or services, nor does OAWU publication make any claims or guarantees as to the validity of the advertisers offer.

H2Oregon is the official publication of the Oregon Association of Water Utilities, and is published quarterly for distribution to representatives of rural and municipal suppliers. Issues are mailed free of charge to member and nonmember rural water/wastewater associations. Articles and photos are encouraged with payment in complimentary copies.

H₂Oregon is published for the Oregon Association of Water Utilities by

Mt. Angel Publishing, Inc.

135 N. Main St., Mt. Angel, OR 97362 503-845-9499 fax: 503-845-9202 www.mtangelpub.com

OAWU Staff Members

Jason Green , Executive Director jgreen@oawu.net

Mike Collier, Deputy Director, Source Water Specialist mcollier@oawu.net

Debbie McCarthy, Office Manager dmccarthy@oawu.net

Barbara Baker, Administrative/Financial Assistant bbaker@oawu.net

Heather Davis, Administrative Assistant hdavis@oawu.net

Tim Tice, Projects Manager ttice@oawu.net

Scott Berry, Operations Manager sberry@oawu.net

Heath Cokeley, Programs Manager, Circuit Rider hcokeley@oawu.net

Hans Schroeder, Circuit Rider hschroeder@oawu.net

Bob Waller, Circuit Rider bwaller@oawu.net

Keith Bedell, Wastewater Technician kbedell@oawu.net

Monty Norris, Wastewater Technician mnorris@oawu.net

For advertising information, contact the OAWU office:

935 N. Main St., Independence, OR 97351

(503) 837-1212

office@oawu.net • www.oawu.net



Oregon Association of Water Utilities

OAWU Officers & Board Members

PRESIDENT

Matt Johnson

City of Monmouth 151 W. Main Street Monmouth, OR 97361 Phone: (503) 838-2173 Fax: (503) 838-0201 mjohnson@ci.monmouth.or.us Rep. Reg. 5, exp. 2023

VICE PRESIDENT

Micah Olson

City of Columbia City 700 N. College St. Newberg, OR 97132 Phone: (971) 563-3128 molson@oawu.net micah@olsonllc.com Rep. Reg. 1, exp. 2025

SECRETARY/ TREASURER

Craig Smith

City of Lake Oswego 17601 Pilkington Rd Lake Oswego, OR 97034 Phone: (503) 260-7519 csmith@ci.oswego.or.us Rep. Reg. 1, exp. 2025

NRWA DIRECTOR

Russ Cooper

City of Monmouth 151 W. Main Street Monmouth, OR 97361 Phone: (503) 838-2173 rcooper@ci.monmouth.or.us Rep. Reg. 3, exp. 2024

PAST PRESIDENT

Mike Edwards

City of Bend 62975 Boyd Acres Rd Bend, OR 97701 Phone: (541) 317-3050 Cell: (541) 480-6530 medwards@oawu.net medwards@bendoregon.gov Rep. Reg. 1, exp. 2024

Board of Directors

Kriss Schneider

Schneider Equipment, Inc. DBA Schneider Water Services 21881 River Rd NE St. Paul, OR 97137 Phone: (503) 913-9308 kriss@schneiderwater.com Assoc. Mbr. Rep. exp. 2024

Craig Sheldon

City of Sherwood 15527 SW Willamette St. Sherwood, OR 97140 Phone: (503) 925-2310 Cell: (503) 969-1671 sheldonc@sherwoodoregon.gov Rep. Reg. 2, exp. 2023

Tim Lyda

City of Tillamook 210 Laurel Ave Tillamook, OR 97141 Phone: (503) 842-2343 tlyda@tillamookor.gov Rep. Reg. 3, exp.2024

Mark Beam

Ice Fountain Water District 1185 Tucker Road Hood River, OR 97031 Phone: (541) 386-4299 Fax: (541) 386-7228 mbeamifwater@hrecn.net Rep. Reg. 2, exp. 2025

Joel Gehrett P.E.

Deschutes Valley Water Dist. 881 SW Culver Hwy Madras, OR 97741 541-475-3849 jgehrett@dvwd.org Rep. Reg. 3, exp. 2024

Marc Caldwell

Avion Water Co. 60813 Parrell Rd. Bend, OR 97702 541-382-5342 marc@avionwater.com Rep. Reg. 3, exp. 2023

Luis Millera

City of Tualatin 10699 SW Herman Rd Tualatin, OR 97062-7092 503.691.3092 Imilera@tualatin.gov Rep. Reg. 1, exp. 2025

Vacant Rep. Reg. 2, exp 2023

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

Changes by Jason Green, Executive Director

One of the most important things at OAWU are the relationships—OAWU is about service and relationships—people, individuals, membership! We do water, clean and dirty, but people is what it is all about! The OAWU membership, the staff and our board members make things happen and we value each individual. When someone leaves, we recognize, nobody will be truly able to replace the one who left, not the person, not exactly what they did or what they knew or how they interacted and met our needs. With this in mind, we have new employees that will make their own way—also, business must go on, and as I have heard, all of us are replaceable, but not the person, the personality, the individual finger prints and influence. No, we enjoy the memories of wins and challenges with those who move on and anticipate the new, the change and challenges and learning to work with those who make OAWU their new place to work and live!

Welcome and introductions to OAWU's Office Manager, Debbie McCarthy. Debbie joined the OAWU team in August and has been working hard on the accounting and financial side of the Association and training with retired Office Manager, Mark Russell, who has been working part time for the Association the last 6-plus months. Debbie has experience in office settings at a CPA's office, as the Head Secretary/Assistant to the principal in a valley area school system, and also as a private business owner and entrepreneur.

We also welcome OAWU's new Administrative/ Financial Assistant, Barbara Baker, Barbara joined the team the first of October. She comes with experience in managing a dental office, an educational assistant at one of the valley area schools, an administrative assistant at a Dallas area company, and as a cabinet inspector. We are excited to work with Debbie and Barbara and look forward to their expertise, enthusiasm and becoming key players in serving the OAWU membership!

With over 13 years of solid and exemplary employment and service as the OAWU Administrative/Financial Assistant, Donna Bernt says goodbye and begins working on enjoying retirement! She stayed on longer than planned and wants to return part time when needed—this is the Donna we grew to love and admire—work and care for everyone and the Association. Such a dedicated, loyal and industrious employee during her time here at OAWU. We do look forward to seeing Donna soon and in the mean time, we hope she enjoys the much deserved time off! On her last day, we enjoyed stories, great food and what friendships are made of. Hugs and well wishes and looking forward to seeing her again—the dear lady gave her all here at OAWU; she made me cry as she drove away and I will miss her, and we look forward to her new stories and adventures when she next visits.





Top: Debbie McCarthy Above: Barbara Baker Below: Donna Bernt





OAWU's Summer Classic 2022

The weather was fantastic, and the activities were great. Monday's preconference 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 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, and some took the afternoon off to participate in the annual OAWU Golf Scramble at Seaside Golf Club. 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 Gold Sponsor, Core & Main and Silver Sponsor, H.D. Fowler.

The annual golf scramble at Seaside Golf Club 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 2023 was won by Joe Little from the City of Gearhart.
- 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 \$5,740.

Thank you for supporting your association.

Mark your calendar for next year's OAWU Summer Classic in Seaside, August 22–24, 2023. See you there! ♦











OAWU's Annual Golf Scramble

Seaside Golf Club - August 24, 2022

The day started off with a slight marine chill and fog; the smell of salt in the air and the low rumble of nearby surf. As the day progressed it became pleasantly warm; it was a perfect day to hit the links for this year's scramble. The staff at the Seaside Golf Club 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 Owens Pump & Equipment, Kennedy Valve/M&H, HD Fowler Co, and Xylem 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: Barber, Tompkins, Siefert, and Stewart

Three-way tie!

2nd place: Waller, Brown, Paula

Andersson, Nagle, Alcada, Knight Johnson, Grossnickle, Puttman, Rolston

The winners of the golfing competition games were:

- Longest Putt #1 Groling
- Longest Putt #2 Trogdon
- KP #1 Navidi
- KP #2 Bentz
- Longest Drive Women's Welly
- Longest Drive Mens' Huntley

Special thanks go out to Bob 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 22–24, 2023. It is a great location to enjoy while you earn CEUs and network with the Associate Members and your peers. ◆











Wastewater Recycled

by Keith Bedell, Wastewater Technician

With the hot, dry season upon us we must watch out for wildfires and low flows for drinking water. We do not have control over naturally started wildfires, lightning, but we can be vigilante about man made fires. Now, on to the water situation. With the drier and warmer weather we have been having, wells have been starting to go dry and spring flows have been reduced. Nothing can be done about the springs, but there are possibilities of helping with the groundwater.

Two ways that have been going on in drier parts of the US are Direct Potable Reuse (DPR) and Indirect Potable Reuse (IPR). DPR is the introduction of reclaimed water (with or without retention in an engineered storage buffer) directly into a drinking water treatment plant. This includes the treatment of reclaimed water at an Advanced Wastewater Treatment Facility for direct distribution and IPR is the deliberative augmentation of a drinking water source (surface water or groundwater aquifer) with treated reclaimed water, which provides an environmental buffer prior to subsequent use (definition source EPA).

As you know, depending on where you are located, Indirect Potable Reuse has been in use for a very long time. A wastewater treatment facility (WWTF) treats the used potable water and discharges the treated effluent into a body of water such as a river, stream, or lake. Then downstream of this released effluent, a city will pump that water into their water treatment plant and produce drinking water for the citizens of that area. Actually, reusing the water again before sending it to their WWTF and sending it on down to the next users. With Direct Potable Reuse the WWTF will treat the water to 97 percent of all drinking water standard and then, like the City of Wichita Falls, Texas did who had a stage 5 drought catastrophe in May of 2014, send it to a Water Treatment Facility that uses microfiltration reverse osmosis treatment to standards higher than current drinking water standards. After this process Wichita Falls then would blend the water 50/50 with raw surface water and then treat at a conventional water treatment plant and distribute to water users. This process was taken offline a year later after they received heavy rains, but they are continuing the process of looking at options to use the treated wastewater in the future.

Scottsdale, Arizona recycles 100% of their wastewater by sending it to 23 golf courses, saving all of the groundwater that would be used on them for potable water. During the winter months the water is used for aquifer recharge as an Indirect Potable Recharge. In 2019 Scottsdale was issued the state's first DPR Permit and only the third in the nation but are not currently using it. Of all the potable water that is produced and distributed, approximately 88% goes to a WWTF. If that water were to be recycled and reused through Advanced Water and Wastewater treatment facilities, then there is a possibility that in this location the citizens wouldn't have shortages due to weather. Something to consider. •





Why Did You Choose

by Monty Norris, Wastewater Technician

How many of us have heard that? Growing up I spent most my days thinking about sports, fishing, hunting, and getting through school so I can get a job and be an adult (sounded fun!). The last thing I thought of was wastewater.

Things most people don't know about me: I was good at baseball in high school, had a try-out with the Marlins, took a year off, worked as a meat cutter apprentice, then started community college as well as showed up to play ball that fall. Meh, I needed to work more than I needed to play ball, so off to work I went.

Twelve years of working production, 7 years of working a summer side business with my wife as ice cream vendors at events until we decided to sell the business, and I moved onto a local papermill for 9 more years. During those years we chased our daughter's passion playing all sports, but she settled in with Volleyball, Golf and FFA. Finding the highest levels from each of them. What a great balance FFA was...hint hint. While working at the papermill they had a small clarifier, presses, a wastewater plant! I thought this was kinda cool and—this is what they use for wastewater treatment in municipalities, and you can go to school for this?

Discussions were had many times about options if the plant shut down. My thoughts always came back to school for wastewater. Well, it came to fruit! A layoff happened, Federal Trade Act was offered, my wife was on board to support this venture and opportunity, so I was out the door and never looked back! After the first year of school, I spent the summer at the City of Corvallis wastewater reclamation facility. Learned the daily routines, observed process changes, upset conditions such as microthrix, trickling filters, anaerobic digestion, and dredging. Before graduating I already had two interviews and landed in Sweet Home working a small conventional plant and water treatment plant that provided invaluable learning opportunities with a great team.

Then I moved on to The City of Stayton working an SBR plant. This was a great opportunity to see conventional treatment done differently. A complete process done in one basin, but all processes were being met and making quality water. U.V. treatment was another opportunity I learned. I trained with a contract technician that was priceless in learning the operation and maintenance of system. The bio-solids that they created were class-A solids created through a drying system. I learned the opportunity for applying the solids grew hugely from class B to class A with the ability to provide a great soil amendment to the public and upon last visit was out of solids.

I then moved on to City of Lebanon as an Op 2, then Op 3. I learned all operations of the plant including lab tech duties, bio solids, and setting up

Wastewater?

and running our copper and toxic monitoring program of the river and plant effluent. I trained under supervisor learning permit and submissions of DMR to fill in if needed or if retired. This past spring, the supervisor retired—I had been filling those shoes ever since successfully planning, troubleshooting, and providing direction to team based on input from team. Remember there is no "I" in team!

I have always been a trainer throughout my working life. I love troubleshooting, data, biology, math, and everything wastewater even when I get a little biomass on myself!

The opportunity to join the staff at OAWU was an opportunity I couldn't pass up and excited to be able to help. I look forward to seeing each and every one of your plants and meeting you in the near future. •

STRUCTURE. & INTEGRITY.



"100 years and still climbing"







INSPECTIONS

Wet Dry ROV

Code Updates Paint Elevated
Ground
Relocation

In-Service Cleaning Insulation

REPAIR

Erection
Dismantles

NEW TANKS - Rick DiZinno (270) 826-9000 ext. 2601

EXISTING TANKS – Jordan Pyles (270) 826-9000 ext. 4601



Over 30 years of experience in providing specialized and affordable insurance services for Oregon's domestic water, sanitary, and irrigation districts.

SDIS has a broad offering of insurance coverages including liability, property, boiler & machinery, crime, workers' compensation, and more. Members of the program also enjoy many benefits including, but not limited to:

- Training, loss control, safety consultations, risk management and claims management services
- · Research and technical assistance
- Pre-loss legal services for members enrolled in the property/casualty program
- Background check and drug-free workplace program
- Member ownership of a program where surplus revenues are invested to stabilize rates and enhance service

Contact us today to learn why the majority of Oregon's special districts choose SDIS for their coverage needs.

Administered by Special Districts Association of Oregon Toll-Free: 800-285-5461 | Phone: 503-371-8667 underwriting@sdao.com | www.sdao.com



All Materials Locator

by Bob Waller, Water Circuit Rider

About 3 years ago the Association bought an all materials locator. Several of OAWU's staff went to Portland for some training. The salesman made it look very simple and easy to use—yes, he was a pretty good salesman.

I have bought many tools over the years, some I needed, others I wanted, like high-end hand tools. Since getting into woodworking some 40 years ago I have always had a normal interest in good quality tools. I see this as a healthy interest, my wife thinks it's a tool fetish, maybe obsessive (WHAT?), but what does she know.

Like most of you, I have had to locate our utilities many times, every time any work was planned that had potential for digging, we received a locate "utility notification." Most of the time I was able to use a pipe & cable locator because 90% of our water lines were metallic or had locate wire buried with the line, I did say our water lines. Our sewer lines were a different animal, they were made of tile, concrete, plastic, or any combination, we would line up manholes or pothole, but many times it was a guess. I didn't realize how many of you have water lines of AC, PVC, etc. with no locate wire and have difficulty locating until working as a Circuit Rider for OAWU.

The first time I had a chance to use the AML I went back to the city I ran for years, knowing where most of the lines were and I practiced finding them. Once I knew I was on the line I tried to see the difference when I started to get off course. My hearing is not great, so I used the headphones to hear subtle changes in intensity. The AML is a scientific instrument that utilizes ultra-high radio frequencies to find differences in densities. So large rocks, old trenches, other utilities, asphalt, lines, everything you can imagine underground, this makes for quite a learning curve. The simple and easy use of the AML the salesman demonstrated was a little different in the field. I believe once I get on a line, I can trace it with confidence and with today's costs for excavation and material, we need to do a good job locating our utilities.

The AML PRO has two lights one on either side of the control buttons, a bar on the screen that show the intensity of the signal, when both lights come on the unit is perpendicular with the line, it also has sensitivity settings from 1 to 32. After I find the line, I adjust the settings as low as I can to eliminate as much background noise as possible. I will then try to find both sides of the line and using a "W" pattern move, slowly back-and-forth. My goal is to get both lights to consistently light up simultaneously on either side of the pipe. The AML Pro we have is not inexpensive, but if you have many lines without a way of getting good locates this may be a good option.

My advice: I am far from an expert using the AML, I much prefer Pipe & Cable locators, but sometimes we just need to find the line and I don't do "Witching." If you are thinking about adding one to your equipment line, there are a couple different models to choose from. The one I have been describing is the AML PRO, so if you would like to see it, give us a call, we can show how we use it and let you have a shot with it.

Like I've said: it does take practice and patience to get confident using the AML and as always keep us in mind at OAWU we're always here to help. ◆



Specializing in underground concrete structure restorations and located in Oregon's Willamette Valley we serve the entire Pacific Northwest. Underground Tech is your leading provider for repairing concrete or brick manholes, lift stations, vaults and waste water treatment plant structures.









OUR PROCESS

 The rehabilitation process begins with surface preparation, usually by means of pressure washing at 4,000-5,000 PSI.

2. After cleaning, active leaks are stopped, high strength restoration mortar is applied using a shot-crete nozzle or centrifugally using the Mainstay Mortar Spinner.

While the mortar is still soft, epoxy
is applied. The simultaneous application of the mortar
and epoxy results in a structural lining that is resistant
to corrosion, with exceptional adhesion to the
substrate even in damp environments.





Communication During

by Scott Berry, Operations Manager

The topic of communications is multifaceted and complex. It encompasses every aspect of expressing and receiving information. Perhaps, in future articles, I'll delve into the types of communication styles such as: *Passive*, *Aggressive*, *Passive-aggressive*, and *Assertive*. Some time should also be spent on development of separate, but related communications plans for utilities that address internal and external communications, both during normal operations as well as during emergencies.

For now, though, this article will discuss the nuts and bolts of how communication can occur during an emergency at a utility.

Ask anyone who has lived through a significant disaster what that experience was like. In almost every case, people will tell you how difficult it was to communicate from their cell phones with coworkers, family and command structures during the emergency and in the immediate aftermath. In my opinion, this is something that is not given enough thought prior to a major incident. What are your normal means of communication? Will they be reliably available during a major incident? What is your backup plan? These are questions that should be asked and answered long before the event occurs.

There have been quite a few utilities in the recent past who have gotten away from traditional two-way radios in favor of using cell phones for voice and text communications for day-to-day operations for the sake of convenience, having a written record with text messages, and the expense of setting up new vehicles and maintaining FCC licenses for VHF/UHF radio bands. I get it, but what do you do when the cell towers are damaged by an emergency or are unavailable or unreliable due to capacity limitations and overuse.

If there still is cell service, we should try not to add our communications on top of an overtaxed system. Keep calls succinct and use text messaging whenever possible. We have a better chance of success with text messages even if calls won't go through. Some cell service providers have a cell priority option or plan for first responders. Check with your provider for availability. What do you do when generators run out of fuel?

Satellite phones are a reliable option that are not dependent on terrestrial cellular networks. There are plans and devices coming out now that can be operated as a hotspot and allow you to send and receive text messages on your smartphone. There is still considerable expense associated with sat phones and plans. It is possible to rent sat phones for use during the recovery phase of an incident, but unless it's already in place, it would not be available during initial response.

My preference during an emergency is still two-way radios. Handheld radios can be charged by your vehicle, by grid power, onsite power generation, even low-cost solar panels, if you have enough extra radios to allow the time needed to fully charge.

Citizens Band (CB) radios are an inexpensive and readily available option. CBs operate between 26.965 MHz and 27.405 MHz and are limited to 4-watt power

Emergencies

output. They are greatly affected by terrain and other physical interruptions. CBs operate in AM and are limited to 40 channels with no privacy codes. Ham, VHF, and UHF operate in FM. There are no FCC licenses required for CB radio use.

General Mobile Radio Service (GMRS) radios operate in UHF frequencies with a maximum power output of up to 50 watts for vehicle mounted and base station radios and 5 watts for handheld radios. There are 22 channels available with 8 additional channels for use with repeaters. There is a requirement for licensing for GMRS radio use. For non-business usage, a single license holder can allow any family member to use a GMRS device under their license. For non-individual use (businesses) each user must be licensed and each license costs around \$70 but is fairly simple to obtain.

Family Radio Service (FRS) radios are the radios you can find at any sporting goods store. They work well, are easily obtained, require no licensing, and they are equipped with "privacy codes." These codes may not work from one brand of radio to another, but they allow the ability to choose one of 22 channels, each with 10 privacy codes so that your communications won't be interfered with by others. FRS radios have up to a 2-watt transmitting power. Some brands claim up to a 35-mile range but that's more of a marketing claim than reality. They, like all two-way radios that don't

utilize repeaters, are greatly affected by terrain and cloud cover as well as heavy smoke. The only way to achieve that 35-mile range in a real-world scenario would be for one person to be several hundred feet up on an ocean-facing cape talking to someone on a boat 35 miles out on a calm, clear day.

One affiliation that would benefit you prior to a disaster is with your local Amateur Radio Emergency Service (ARES) network. ARES is a group of ham radio operators that offer their services during emergencies. Most County Emergency Operation Centers also coordinate with ARES.

During the 2020 fires, we utilized FRS radios for communications in the burned-out communities that we were assisting. We quickly devised a plan for one of us to exit the burn area at a pre-determined time and pass on any communications with our office as well as the command structure in place for that area.

Regardless of what device you choose, make all communications clear, concise, and request confirmation that your message was received and understood.

The greatest problem in communication is the illusion that it has been accomplished.

—George Bernard Shaw

Special Thanks to Our 2022 Sponsors

GOLD SPONSOR

Core & Main

SILVER SPONSOR **HD Fowler**

DIAMOND, GOLD, SILVER, and BRONZE sponsorships are available.

TO BECOME A SPONSOR, CALL 503-837-1212



System Surveys

by Hans Schroeder, Circuit Rider

I have found many people get nervous when they find out they have a System Survey coming up. No, I don't blame them for that feeling as I always had some anxiety when I had one coming for my old system, but I think just taking some time before the survey and preparing the things that State or County personnel need to see will make this process a bit less painful.

To try and help with that I have listed the main things they will want to see. The first 9 things on the list are for all water systems, number 10 and 11 are only for community water systems. I have added a few recommendations after some of these listed items. Things needed for the surveys will change with system size and complexity, so if you have a surface water treatment plant, you will want to review the Drinking Water Program web site for additional information at http://public.health.oregon.gov/HealthyEnvironments/DrinkingWater/Operations/Pages/osp.aspx.

- Written Coliform Sampling Plan. The new total coliform rule took effect April 1, 2016, make sure yours is up to date. Specifically for a well system all sources of water that could have fed the area that had a Coliform or E coli positive will be sampled.
- 2. A map of the distribution system. You should have one in with the Coliform sapling plan that shows all the test locations as well as repeat locations.
- 3. Operation and Maintenance Manual and other written procedures. If you don't have one or are looking to write a new one, OAWU puts on a one-day training and provides an electronic template to help systems write the O&M Manual.
- 4. Emergency Response Plan. All systems should have an ERP and should update it at least once a year and fully go through it ones every 5 years.
- 5. Chemical dosage records if treatment is applied.
- 6. Proof of NSF Standard 60 certification for each chemical added to the drinking water.
- 7. Chlorine residual monitoring records if the system is chlorinated. Even if you only apply chlorine for a residual maintenance program you still need to be taking at least two chlorine readings in the distribution system a week. With larger systems and surface water more frequent sampling is required.
- 8. Results of any tracer study to verify disinfection contact time, if applicable.
- 9. Photos or other documents that provide enough detail to determine the current condition of storage reservoir features. Such as: access hatch in open and closed/ locked positions, air vents that show all screening is secure with no gaps, and any other openings into the tank interior such as telemetry ports and cathodic protection. Make sure the overflow pipe and/or drain line has a flapper or is screened to keep animals from crawling up it. All of these items should be checked on an annual basis, which would be a good time to take pictures to document for the survey.
- 10. Cross-connection control program plan, records, latest Annual Summary Report, etc.

11. Written protocols for under-certified operators, if applicable. If you do not have this form filled out the State has a very simple template on the Drinking Water Program web site under Written Protocol for Operators.

If you have a well, check and make sure all openings into that well are sealed or screened like the vent with the screen pointed down. Don't store chemicals (unless used for water treatment) within 100 feet of the wellheads. The system should own or have a restrictive easement for 100 feet around the wellheads that prevents chemicals from being applied or vehicles from being stored, etc. If you have fuels stored within 100 feet, such as a backup generator fuel tank, it must have secondary containment of at least 110% of the tank's capacity.

Please note that whenever you update a written plan it is a good idea to have a piece of paper in that plan that can be signed with the date it was updated. Some of these plans have set times they must be updated so that is a good way to log that, as well as just a good practice. What I would always do before a survey is lay all these plans out on a table before the State or County staff came to the facility and number them with the corresponding number on their list. This would help to expedite the survey.

At least in my experience, the state and county staff that come out to complete these surveys want to see the system do well in them because if everything is up to date and all the requirements are met for the Outstanding Performer Criteria then we won't need to do another system survey for 5 years.

I hope you have found something useful in this article that will help to prepare for an upcoming sanitary survey and don't be afraid to give a Circuit Rider at OAWU a call, as we can come out and do a mock survey for the system before a survey to help prepare and with that, I will see you down the road. •





REFINED MARKER TECHNOLOGY FOR

UNDERGROUND UTILITIES

DIG SAFE. DIG RIGHT. SAVE TIME.

Mark and Locate ALL Buried Services:

Water / Gas / Comms / Electric & Others.

FAST. ACCURATE. RELIABLE.



ITC

Call us for a no obligation on-site demonstration!

INSTRUMENT TECHNOLOGY CORPORATION

Ph: (800) 519-1998 • sales@instecorp.com

Suppliers to the Subsurface Utility Engineering Community Since 1995

Nowhere!

by Tim Tice, Projects Manager

Challenges at work, home, or in society can make us feel we're on a non-stop train to nowhere or is that what our brains want us to believe. Perception is how people regard or interpret any given interaction. Perception leads to speculation, and often is way off the target from the truth. Our initial interpretation of something through our senses is only the first step toward understanding the truth.

Step two is discernment, an ability to judge well, sharpen our perception which hopefully leads us toward actions for the betterment of the given situation. The speed in which society is moving convolutes the ability to perceive and discern properly. Experience (time to learn) is best summed up, "you can't put an old head on young shoulders" until we experience a situation, how will we know how to act. Standing on the sidelines only allows us the first step in developing our perception.

Observance from the sidelines is most relevant when we are in the moment, a moment that stops us in our tracks to see what is happening. There are people capable of seeing in slow motion those small changes that move them to better decision making. The UCLA head coach, John Wooden, at the top of his pyramid of "success" is patience and faith. Under patience a short phrase, "good things take time."

How contrary is his phrase when the speed of life seems to be increasing beyond our ability to understand all that we encounter. Quiet time may aid us in seeing small, subtle changes in any given situation, but it is key we prioritize our lives to create this quiet time, whatever it may look for each of us. Sitting on a front porch, going for a short jog, or a hike in the hills can be worthwhile for the personal time.

Some people have an ability to perceive accurately through what is called a gut instinct. It is admirable when a young person shows a high level of discernment when their experience is minimal, and therefore the gut instinct is fortified.

For most people patience comes with age, and perception is focused on the important matters that are arranged according to our time in life. The future is coming at us and the old adage, "time flies when you get older" certainly holds true. So, efforts in our perception, should maybe be focused in the moment, "now here!"

The best of everything that life has to offer! —Mr. OpTIMist ♦







Mentorship

Heath Cokeley, Programs Manager/Circuit Rider

After traveling our great state of Oregon, I have noticed several things all communities have in common, no matter what the size of the town. This article will give a proactive solution to a very real problem that several of us seem to have.

With many public works departments having employees that are part of the baby boomer generation and many of them thinking about retiring, we need to start proactively seeking out the younger generations about going into our field. Knowledge will be lost. How many systems don't have diagrams of the meters, pipes, valves that were installed in the 60s, 70s, 80s and 90s? It is just in the mind of the public works director that has worked there forever and who is now thinking of retiring.

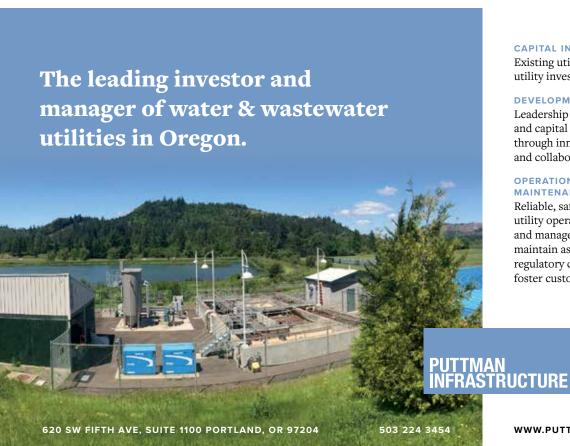
Many schools in the fall have job fairs where many business people show up to influence high school students to start thinking of a career, especially the juniors and seniors. Of course, we all realize there are many branches of the service there; bankers, realtors, and local business people. Have you ever thought of attending your local high school's fall job fair?

This would be a great way to reach out to the community that pays your wages and benefits and might get our younger generation thinking about going into either the wastewater or drinking water industry. What kind of things would we talk to the students about? Well, what about a student who likes to work outside, work with their hands, good at math, repairing things, welding, and/or mechanically inclined? We also want to talk to them about building a retirement, having benefits like health, dental and vision insurance and accruing vacation and sick days; point out to them that if they have that when they take time off work, they can use their leave and keep their paycheck the same and not lose any pay. Most students haven't thought about those things, not to mention the rewarding hours worked and the paid holidays.

Did you know that all high school students that graduate in Oregon are required to do a senior project? Most of the students spend 9 to 18 weeks to accomplish this requirement. What a great way to give back to the community again—by letting a student or even a few students job shadow you or your coworkers. They can learn what would be required of them to go into our great field and what kind of classes they would need to take if/when they attend college. Plus being a mentor is a great way to give of ourselves and show the community how much we truly love and appreciate our career.

Another thing to plan is to offer an internship for the student who took the most interest in the job shadowing program. It needs to be put in the budget, so making a plan early is key to finding a way to put this in the budget or obtain a grant to help pay the expense of the students' wages. We all know we need extra help with mowing the parks, cemeteries and doing cleanup for the many functions that happen during the summer months in our towns. Why not offer just a little bit more? Have them help at the sewer plant, water plant, reading meters, communicating with the city hall staff, mayor, councilors and most of all, the people of the community. This will keep them motivated to pursue a career in the public works field.

I hope this helps to get you thinking of something other than everything that was already on our list to accomplish during the summer, and we didn't quite get them all done, or hoping we don't have another winter with no snowpack and having to deal with another drought-stricken summer in 2023. •



CAPITAL INVESTMENT

Existing utility acquisitions. Direct utility investment and ownership.

DEVELOPMENT & CONSTRUCTION

Leadership in utility development and capital project construction through innovative delivery models and collaborative partnerships.

OPERATIONS.

MAINTENANCE & MANAGEMENT

Reliable, safe and cost-effective utility operations, maintenance and management services to maintain asset value, ensure regulatory compliance and foster customer satisfaction.

WWW.PUTTMAN.COM



Keep your covers where they belong.

Find out how the STORMSURGE® access assembly protects you from missing manhole covers after a major rain event.

Learn more at ejco.com or call 800 626 4653 Made in the USA





Why Forgive?

by Mike Collier, Deputy Director/Source Water Specialist

This is an update to an article I had originally written in 2011; wow does time fly. With the current state of our union, I figured that this article could be a good reminder for many of us. As we try to manage the many different opinions flooding into our lives, how we feel during the different interactions that we are either part of, hear about, or see on the sensationalized news that continually comes at us every day.

Doesn't it feel good to harbor resentment toward, give dirty looks to, and even hate someone who has wronged us? The empowerment we feel from these attitudes may be right, even justified. However, is it worth it in the end? These little seeds of hatred and bitterness will grow and will begin to rule our life. To forgive is to give ourselves freedom from the agony and anguish that wells up inside when we think of the person or event that has caused so much pain.

Even when the perpetrator does not acknowledge our forgiveness or continues to act poorly toward us, the forgiveness that we have conveyed toward them will begin to free us from the self-inflicted torture. The internal release of these bad feelings may not happen immediately, but as true forgiveness takes place we will feel more and more at peace. We will realize that it is the other's problem not ours and may even begin to see that they may have a deeply rooted pain and are just reacting or have, for some reason, been harboring hurt feelings from soothing we have previously done.

As Jesus once said in Luke 23:34, "forgive them; for they know not what they do." In case you don't know the history behind this statement, Jesus was asking God to forgive those that had decided to punish him (even to his death) for crimes he had never committed. His anger would have been justified, but he chose to show the example of forgiveness to us, even when wrongly accused and punished. This is true forgiveness.

Some people need forgiveness continually, they always seem to be hurtful or pushing our buttons on purpose. These people are especially hard to forgive, after we have decided to forgive them, it would be good to talk with them about how we feel. If they still do not change it would make sense to try to avoid them and continue to try to forgive them. Removing ourselves from their presence (including online) will give them less of an opportunity to be harmful. At this point we have done all that we can to remedy the situation and it is time to move on. Sometimes getting such a person out of our lives may be the best option and at that point the forgiveness we have been attempting can be further realized.

When we don't think that we have the will or desire to forgive someone for a wrong they have committed against us think about these stories of forgiveness:

Several years ago, there was a shooting of several Amish. The bishop whose grand-daughter had been killed visited the wife of the killer a few hours after the shooting and told her that the Amish had already forgiven her husband of this horrible crime. It must have been very difficult for these families to forgive the killer of their children and grandchildren, but they managed to do so just hours after seeing their dead relatives.

• This time we have killings of a family by another family member:

"The killings in my family were so senseless and wasteful; I hated the killer. A life sentence with the possibility of parole was way too good for him. I wanted him dead, just like my aunt and three cousins. Most of all, I wanted him to pay for hurting us so much. Bitterness ate me alive, and I knew I could no longer go on as if I were over it. I realized my hatred was no better than the hatred that caused this young man to pick up a gun and blow away his family. Hatred did nothing to bring them back; it only hurt me more. I could either let it consume me or let it go... I no longer harbor venomous thoughts toward the young man who murdered my relatives, nor do I wish him dead. Since he has still not expressed any remorse, I do feel he should be in jail and that justice must be served. But I am free from the bondage of bitterness." —Smith, Lynetta L.

To forgive is a choice, and it will help relieve anger, hatred, and feelings of ill will. It is not easy, especially if we have been truly wronged, but by not forgiving we are allowing the person or situation that is behind our struggle to maintain power over us. Forgiving others is a difficult, but important choice.

Often it is even more difficult but is equally important to forgive ourselves for the things we have done. As with others, we are only human, and make mistakes. If we are unable to forgive ourselves of the things that we have done in the past it can easily consume our time and continue to be a painful reminder, even pushing us to dull the pain in other destructive ways.

Forgiveness is not to forget. We will probably never forget our past failures, but we can move on from them, learn from them, and grow from these experiences. We don't have to allow them to depress or stress us out for the rest of our days. We cannot run from ourselves and cannot hide from our feelings; it is much easier and better, in the long run, to choose to forgive. Sometimes it is necessary to seek professionals to help us begin to forgive ourselves and others.

Reid, Tim. Nickel Mines, Pennsylvania. Times Online October 5, 2006. *Amish Bury Their Girls and Forgive Killer and His Family*.

Smith, Lynetta L. Freedom from the Past is Possible in the Present.



28800 SW Boberg Rd Wilsonville, OR 97070

503-783-3490 Cell 503-476-2804 edp@hdfowler.com

Ed PettettOutside Sales





WE PROVIDE COST EFFECTIVE WAYS TO MEET ALL YOUR WATER SYSTEM NEEDS

CONTACT US AT:

(800) 841-7689

www.bmi-backflow.com

- TRAINING
- CONSULTATION
- PUBLIC EDUCATION PACKETS
- ASSEMBLY TRACKING SOFTWARE
- ENFORCEMENT DOCUMENTS
- WRITTEN PROGRAM PLANS

"BMI is dedicated to the pursuit of clean, safe drinking water through education"



Turnkey water SCADA in the cloud Water | WWTP | Irrigation 1-208-362-5858 sales@carefreescada.com

Operator Views

- View equipment status in realtime
- Supervisory control from operator views
- View and acknowledge process alarms
- Easy to use

Historical Trends

- Meet regulatory agency requirements
- User-selectable time periods
- · Seconds, minutes, hours, days
- Color-coded traces

Asset Management

- Avoid unplanned downtime
- Calendar and condition-based scheduling
- · Maintenance work orders
- Easy to use

Mobile Access

- · Always be in touch with your plants and processes
- Access your SCADA data from anywhere at any time
- View and acknowledge alarms easily
- Easy and intuitive to use

Cloud Based

- Minimal or no additional computer hardware investment
- Updates automatically
- Low maintenance
- Secure







Brought to you by:



24_{hr} \$
Emergency Service
We Answer Your Call!

QUIZ CORNER

1. Calculate the flow through a filter in gpm when 1.8 million gallons flows through the filter during a 42 hour run.

A. 1,100 gpm C. 550 gpm B. 714 gpm D. 950 gpm

2. How many cubic yards of earth are excavated for a trench that is 450 feet long, 42 inches wide, and 8 feet deep?

A. 1,150 cubic yards
C. 750 cubic yards
B. 467 cubic yards
D. 985 cubic yards

3. Why can rapid sand filters handle higher filtration rates compared to slow sand filters?

A. Finer sand

- B. Coarser sand
- C. Much higher water level above the filter's media, thus higher head pressure
- D. Media not as thick
- 4. An operator should record filter _____ measurements, condition, and depth of media on a _____ basis.
 - A. Bed expansion, weekly
 - B. Sieve analysis, monthly
 - C. Bed expansion, quarterly
 - D. Sieve analysis, annual

5. At what temperature does water vaporize?

A. 218 degrees F

B. 212 degrees F

D. 50 degrees F

6. How long can a person live without food?

A. A week

C. More than a month

B. 15 days D. 45 days

7. How long can a person live without water?

A. Approximately one week, depending upon conditions

B. 3 days

C. One month

D. 15 days

8. How much water is used in the average five-minute shower?

A. 5-10 gallons
 B. 10-15 gallons
 C. 15-25 gallons
 D. 25-35 gallons

9. How much water does it take to process a quarter pound of hamburger?

A. Approximately 1 gallonB. Five gallonsC. 8 gallonsD. 15 gallons

10. 1 part per billion would be the first 16 inches in a trip to the moon.

A. True B. False

VN2MEK2: 1-∀' 7-B' 3-B' 4-C' 2-B' 6-C' \\ \ \ \ \ \ 8-C' 6-∀' \\ 10-B −

UPCOMING TRAINING & EVENTS

Date	Class Title	Location	CEU Information	ESAC#, Fed	e/Free
November 1–3	Spirit Mountain Casino Operator's Conference	Grand Ronde	2.0 Water/Wastewater	4707	Fee
November 16	Distribution Basics	Turner	0.6 Water	4117	Fee
November 17	Developing Your Operations & Maintenance Manual	McMinnville	0.4 Water/Wastewater/0.2 Onsi	te 4032	Fee
November 17	Leak Detection	McMinnville	0.2 Water/Wastewater	4396	Fee
December 12-	15 Annual End of Year Operators Conference	Hood River	2.7 Water/Wastewater	5739	Fee

Levels 1-4 Water Operator Exams

Trained and certified operators are necessary to ensure that the systems are managed in a manner that fully protects public health and the environment. The OARs for certification stipulate that the qualifying experience for applicants for certification as a water treatment plant operator must attain at least half the required operating experience at a public water purification plant that uses complex filtration technology and in on tomore than one classification lower than the level of certification. In other words, if you have only worked for a Class 2 treatment plant, we allow you to apply for a Level 3 certification but not a Level 4 certification. It is a class 2 to a class 3 plant, then you must have 1/2 the qualifying experience (at the Level 3 plant) before allowing to apply for a Level 4 certification. Reciprocity from state-to-state ensures that the operator have the operating experience for which they are certified.

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

Drinking Water Data Online Drinking Water Services https://yourwater.oregon.gov

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.

For more information on any class by OAWU, please contact the office at 503-837-1212, office@oawu.net or visit www.oawu.net.

Requesting Public Records from OWRD

Water utilities and municipalities should have a water rights inventory and keep it updated. The best place to start with a public records request is with the Oregon Water Resources Department ("OWRD"). This article will introduce OWRD online resources and explain "how to" file a Public Records Request to the OWRD.

Defining Public Records

Subject to a few exceptions, all government records of any kind are considered public records. A public record is any writing with information about the conduct of public business that is prepared, owned, used, or retained by a public body. See ORS 192.311(5) (a). *Writing* is broadly defined in ORS 192.311(7) and can include information stored on virtually any medium, including information maintained in "machine-readable or electronic form."

As a state agency subject to the Public Records Laws, OWRD is obligated to provide any such public record to an inspector who makes a request. Those public records can include documents such as water right Applications, Permits, Certificates, Transfers, Decrees, Court Orders, and related correspondence.

Searching for OWRD Online Resources

In Oregon, first check to see if such information is available on the OWRD website, published in a WRD document, or on the State of Oregon's Transparency Website and Open Data Portal. For example, when it comes to a water rights inquiry, the Water Rights Information System ("WRIS") that can be found on the OWRD's website is a helpful resource that provides information pertaining to water right applications, permits, certificates, transfers, leases, and related information. If you cannot find the needed information online, filing a Public Records Request is the next step.

Filing an OWRD Public Records Request

As indicated on the OWRD website, to make a Public Records Request, the Request must be submitted in writing through mail or email and include the following information:

- Name of the Requester
- Organization of the Requester, if applicable
- Address of the Requester
- Email address of the Requester
- Telephone number of the Requester

OWRD also asks the Request be as specific as possible, including:

- Types of records requested
- File name and/or number
- Subject matter
- Approximate date(s) to search

It is recommended that whatever information you obtained online be included in the request to give OWRD a starting point and avoid unnecessary searches or costs.

Acknowledging the Request by OWRD

Once OWRD receives a Public Records Request, OWRD must acknowledge receipt in five business days. See ORS 192.324(2). The acknowledgment must also notify the requester whether the public body is the custodian of the requested records. Id.

Completing the Response to a Request

A requester who files a Request with OWRD can generally expect a response from OWRD within 15 business days after OWRD receives the Request. The law establishes a baseline expectation that public bodies will complete their responses within 15 business days after receiving the request. See ORS 192.329(5).

However, OWRD must still complete its response as soon as practicable and without unreasonable delay. See ORS 192.407(1) (c). Requesters who have made particularly straightforward requests can appeal a public body's inaction before the 15 business days elapses. A public body unable to meet the 15 business-day deadline must notify the requester in writing that the request is still being processed and provide the requester with a reasonable estimated completion date. ORS 192.329(5)

If OWRD denies a Request for Public Records, the Requester can file an appeal to the Oregon Attorney General using the Petition for Public Records Order. ORS 192.411(1)

Receiving the Requested Public Record

In general, a public body must provide a copy of a nonexempt record if the record is susceptible to copying. See ORS 192.324(1) (a). Public bodies must provide electronic records in the form requested, if available. If the requested form is unavailable, the public body must make the record available in the form it is kept. See ORS 192.324(3).

Fees

Filing a Public Records Request to OWRD may incur fees. ORS 192.324(4)(A) allows public bodies to establish fees "reasonably calculated to reimburse [it for the] actual cost of making public records available." This includes the "costs for summarizing, compiling or tailoring the public records, either in organization or media, to meet the person's request." If the fee estimate for a request exceeds \$25, the public body must first provide a written estimate to the requester and receive confirmation that the requester is willing to pay.

ORS 192.324(7)(b) requires public bodies to make available to the public the amounts of and the manner of calculating fees for responding to public records requests.

OWRD's fee schedule is published on its website for the public to review. As a practical matter, when filing the Request, we recommend the requester include an amount such as "up to \$100, she is

by Laura Schroeder & Echo Zhang

willing to pay for requesting materials" and request OWRD to advise if the cost may exceed that amount. ORS 192.324(4)(c).

Conclusion

Once the Public Records are received, the utility can prepare an inventory and document any deadlines when they are reviewed. Confirming that OWRD has the correct entity name and address associated with the water rights is also an important final step to make sure that the utility or municipality can receive correspondence from OWRD related to its water rights. •

Schroeder Law Offices, P.C., was founded by Laura A. Schroeder and represents water-rights clients in six western states and consults internationally.

This article was drafted with the assistance of Echo Zhang. Echo is a Law Clerk with Schroeder Law Offices and is a 3L student at the University of Washington.

You can read more about this topic and other water rights issues at Schroeder Law Offices' Water Law Blog: http://water-law.com/home/blog/.



FINALLY!

AN INSURANCE POLICY DESIGNED FOR YOU.

Most water districts end up purchasing costly, inadequate insurance that fails to provide protection from every day risks. WaterPro's insurance program protects your district's property and liability exposures including protection from risks like Accidental Pollution, Failure to Supply, Equipment Damage to pumps, gages, and electrical boards along with an array of available add-ons.

Stop paying for mediocre insurance coverage. Upgrade your protection.

ALL YOU NEED IS BANCORP. CALL US TODAY!

(800) 452-6826 • www.bancorpinsurance.com







PROVIDING WASTEWATER SOLUTIONS FOR 25+ YEARS

Plant Startup

Plant Restart

Nitrification

Denitrification

F:M Maintenance

FOG Reduction

Foaming Control

Solids Reduction

ProBiotic Dredging®

External Carbon Source

Oregon - Ken (503) 697-9711 Washington - Alvin (253) 857-7800

BioLynceus Partnered with Bainbridge Associates





Let's talk solutions!

UPCOMING CONFERENCES



Annual End of Year Operators Conference Hood River • December 12–15

45th Annual Management & Technical Conference Sunriver, March 6–10, 2023





www.lakesideindustries.com

For more information contact:

Bob Schnelle

360-210-9135

bob.schnelle@lakesideindustries.com

EZ Street® and the EZ Street Logo are registered trademarks of Asphalt Research Technology, Inc. © Copyright 2022

WHY AREN'T YOU A MEMBER OF OAWU?

Serving Water & Wastewater Utilities Since 1977

- We provide onsite technical assistance and training, meaning that we will come to you and help with any problems you may be encountering with water or wastewater.
- We provide water and sewer rates and lagoon profiling. Call OAWU at 503-837-1212 for a bid or estimate. We can save you money!

These are just a few facts about OAWU. The next time you are in need, pick up the phone and call us before hiring outside help. We are here to help. It's our industry. It's what we do.

To join or for more information, visit www.oawu.net or call 503-837-1212.

Oregon Association of Water Utilities 935 N. Main Street Independence, Oregon 97351 Phone (503) 837-1212 Fax (503) 837-1213 www.oawu.net



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

2022 OREGON ASSOCIATION OF WATER UTILITIES

MEMBERSHIP APPLICATION

Member Name:		Membership Types		
Mailing Address:		Regular Member		
City/State: ZIP:		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		
•				
Email:		Associate Member		
Phone: Contact Person:		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.		
Contact reison.		Annual Dues \$500.00 per year		
Number of Hook-ups:		Individual Member		
Were you referred? By whom		An Individual Member shall be an individual involved in the water/wastewater industry or a user of such utilities. The		
Type of System:		membership is informational in nature and shall be non-voting.		
, . ,	stewater 📮 Both	Annual Dues \$100.00 per year		
Membership Category Membership Dues		Benefits of Membership		
☐ Regular Member	\$	On-site technical assistance		
O	See schedule below	Various free training programs		
☐ Associate Member	\$500.00	• Discounts on training courses		
☐ Individual Member \$100.00		• Discounts on Annual Conference registration		
		 Access to on-site training program 		
Regular Member 1	Dues Schedule	 Subscription to quarterly H2Oregon magazine 		
1 to 100	\$75 + 42 cents per connection	• Direct mailings about upcoming training courses in your area		
101 to 500	\$85 + 42 cents per connection	• Summaries of legislative issues		
501 to 1,000	\$90 + 42 cents per connection	• Legislative representation at state and federal level		
1,000 and up	\$100 + 42 cents per connection	Associate Member Services and Products Guide		
Maximum dues is	\$1,200.00	 Access to technical assistance library 		
		 Access to technical and testing equipment for loan 		
☐ Please Invoice	☐ Payment Enclosed	• Voting rights in Association affairs		
		• Positive contacts with other organizations		
Credit cards: please of	call 503-83 <i>7-</i> 1212 for	Camaraderie with water and wastewater professionals		
processing and receipt.		Operator Of Record services		
		Job referrals, announcements and searches		
Please return to OAWU:		Well testing, plan review, rate studies, WMCP plans		
935 N. Main St., Independence, OR 97351		System performance evaluation and options		
	awu.net or fax: 503-837-1213	Additional programs and services		

MB22

• Disaster response assistance and planning

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

Arrah Wanna Water Company 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 Research Inc.

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

Chenowith Water PUD Chiloquin, City of

CHR Dist. Improvement Co. Christmas Valley Domestic Water

Cimmarron City Water Co., Inc. Circle C Improvement Dist.

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

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&II

Diamond Summit Association Dietz Airpark Water System

Donald, City of Drain, City of Drifter's MHP

Dry Creek Airpark HOA, Inc.

Dufur, City of

Dundee, City of 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 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 **Greenhoot Properties** 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.

MEMBERS «

London Water Co-op Long Creek, City of 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

Modoc Point Sanitary District

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
Odell Water Company
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

Philomath, City of

Paradise/Rogue Meadow WS Parkdale Water Company, Inc. Perrydale Domestic Water Association

Phoenix, City of Pilot Rock, City of Pine Grove Water District Pioneer Park Water Co-op Pioneer Village Water Company, Inc.

Pleasant Valley Water Company Pleasant View Water Company 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.

Redwood Water Service, Inc.

Reedsport, City of Rhododenron 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

Salmon Valley Water Company

Sandy, City of Scappoose, City of Scio, City of Scotts Mills, City of Scravel 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

Silverton, City of Sisters, City of Skylane Farm

Skyview Acres Water Company Sleepy Hallow Phase 1 Water

Sodaville, City of South Fork Water Board South Hills Water System, Inc.

South Hills Water System, Inc.
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 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 OF

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

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 Water District Wheeler, City of Wickiup Water District Willamette Water Company Willamina, 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

Wilsonville, City of

Young Life Young's River Lewis & Clark WD Zig Zag Water Cooperative, Inc.

>>> WELCOME, NEW MEMBERS! ≪

Connelly, Barbara Hermansen, Dave MuniBilling

Hunter, Greg Blench, Steven Bagdonas, Eric McMullen, Ryan Fluetsch, John Hills, Tyler

Allen, Thomas Estacada Mobile Village Morrison-Maierle

BWS, Inc. Goble Sampson MuniBilling

INDIVIDUAL MEMBERS 🐟

Anderson, Kenneth Anthony, Joe Barnes, Chase Bidwell, John Blench, Steven Boyles, Blake Brown, Rick Buskirk, Jeff Cable, Ioe Caldwell, Kevin Calhoun, Christopher Carlson, Rob Ceballos, Oscar Chipman, Kenneth Christensen, Matthew Clark, Jamie Clark, Joshua Clement, Tony Close, Greg Conant, Charles Connelly, Barbara Crosby, Ty

Degn, Tony DeHaan, Josh Demanett, Micah Durfee, Kenneth Eggleton, Vincent Elder, Dave Evans, Peter Fluetsch, John Free, Derek Freel, Milton E. Gallino, Joseph Gentry, Mike Gil, Riley Gilkison, Levi Glanz, Jared Gott, Craig Halverson, Bruce Hamilton, Megan Hamilton, Mitchell Hand, Eric Hanks, Kevin Haring, Joshua Hartley, Stewart

Hawkins, Michael Hermansen, Dave Hisaw, Russ Hoefler, Matthew Hoesch, Jacob Horton, Ray Houchin, Jeff Howard, Richard Howell, Roy A. Hubbard, Tom Huff, Zach Hughes, James Hume, John Hunter, Greg Jackman, Danaea Jackson, Pat Jacob, David Johnson, Grady Jones, Robert Judah, Dave Katrena, Scott Kemmer, Alex Kemper, John

Kirchmann, Russell Klinger, Martin Kunders, Aaron Laetzsch, Dawna Lambert, Ross Lee, Jon Leffler, Chuck Lockard, Darrel Malone, Pamela Marshall, Chad Marshall, John Mathews, Daniel G. McCaslin, Dale McCready, Wade McElroy, Kerry McFall, William B. McGanty, Mike McGinnis, Lee McLauchlin, Gary McMullen, Ryan Merrell, Thomas Miranda, Michelle Mitchell, Michai

Moffit, Jeremiah Monnin, Brian Moretti, Garrett Monroe, Donald Morris, Brady Morrow, Jason Neal, David Nelson, Ron Novac, Samuel Odell, Mark Onkka, David Ortiz, Sam Ott, Mallory Paola, Robert Partney, Sheldon Pierce, Scott Pike, Steven Pino, Patricio Powers, Ryan Pryor, Ben Ramsey, Tyler Ranch, Destin Rand, Terry

Renhard, Chad Robinson, Rob Robustelli, Jason Saubert, Terry W. Schaafsma, Eric Schluckebier, Dave Schroder, Michael C. Scott, Keri Sears, Ronelle Seelye, Shawn Sewall, Andrew Sibert, Donald Smith, Contrail Smith, Larry Springer, Rondi Stark, Chris Statchwick, Jeff Steidler, Matthew B. Stirling, Ethan Taylor, Ian Tecmire, Chad Terrusa, David Thompson, Branden

Thaver, Bradley Tupper, Sean Uhrich, William J. Valencia, Albert VanWagoner, McClellen Vega, Braden VonPinnon, Michael Vorpahl, Mike Wabschall, Aaron Wabschall, Steve Welch, Logan Wesely, John Williams, Scott Winterton, Robbie Woodward, Steve Zuniga, Antonio

ASSOCIATE MEMBERS «

4B Engineering & Consulting A.Y. McDonald MFG. Co. Adkins Engineering & Surveying Advanced Control Systems Aegion-Insituform Technologies, LLC **AKTIVOV** Asset Management American AVK Company American Flow Control Anderson Perry & Associates Aqualitec Corp. Backflow Management, Inc. (BMI) Badger Meter, Inc Bainbridge Associates, Inc Bancorp Insurance Beebe Water Systems Big Dog Sales, NW BioLynceus, LLC

Business Oregon Development Dept. Cascade Columbia Distribution Co. Cascade Waterworks

CIMCO-GC Systems, Inc. CIMCO Sales and Marketing Civil West Engineering Services Clow Valve Company

CoBank

Columbia Laboratories Consolidated Supply Co.

CORE & MAIN

Correct Equipment, Inc. Ditch Witch West

Diversified Construction and

Consulting, LLC

DN Tanks

Edge Analytical Laboratories

Energy Trust of Oregon Enviro-Clean Equipment, Inc.

Ferguson Enterprises

FloHawks

Frank J. Martin Company Frontier Precision, Inc.

Frost Engineering Service Company NW

Furrow Pump, Inc.

G.T. Gordon & Associates, Inc.

General Pacific, Inc.

Goble Sampson Associates Harmsco Filtration Products

Harrang Long Gary Rudnick PC

HASA Inc.

HD Fowler Company, Inc. Heard Farms, Inc.

Hose Solutions

Hurley Engineering Company

Hydra-Stop HYMAX by Mueller InfoSense, Inc.

Instrument Technology Corporation

Kasco Marine Kennedy/M&H Valve

Lakeside Industries/EZ Street

League of Oregon Cities Madewll Products Crop.

Master Meter, Inc.

Metolius Engineering LLC Morrison-Maierle

Mueller Company

MuniBilling

Neptune Technology Group

Nurnberg Scientific NW Hydrovac Olson Engineering

One.7, Inc.

Optimal Control Systems

Oregon Public Utility Commission

Orenco Systems

Owen Equipment Company Owens Pump & Equipment PACE Engineers, Inc.

Pacific NW Sales

Pittsburg Tank & Tower Co.

PumpTech Inc

Puttman Infrastructure, Inc.

RDO Equipment Reiner Pump

Romac Industries, Inc. Romtec Utilities, Inc. Schneider Water Services Schroeder Law Offices, PC

Sensus USA

SHN Consulting Engineers &

Geologists

Smart Earth Technologies Smith & Loveless Inc.

Special Districts Assn of Oregon

SUEZ Water Advanced Solutions

The Automation Group The Ford Meter Box Co., Inc.

TMG Services Trade Tool Tripac U.S. Cellular **UGSI Solutions** Umpqua Research Co.

Underground Tech. **USABluebook** Vortex Pipe Waterlab Corp

Western Water Works Supply, Co. Whitney Equipment Company, Inc.

Wm H. Reilly & Co. Xylem, Flygt Products



Innovate and win your day using

Neptune® 360™

Manage, share, and secure your data.





Oregon Association of Water Utilities

935 N. Main St. Independence, OR 97351 503-837-1212 Fax 503-837-1213 **Address Service Requested**



PRSRT STD U.S. POSTAGE PAID SALEM, OR PERMIT No. 463

CLOGGED PUMPS?

Tackle wipes and large debris with these solutions from USABlueBook!



FOR LARGE MUNICIPAL LIFT STATIONS

Deming Demersible Chopper Pumps

 Slice the most troublesome solids into small pieces

StationGuard Manual Bar Screens

Capture damaging wipes and debris

DEMING[®]





GET PRODUCT DETAILS AT usabluebook.com/NoMoreClogs

800.548.1234 · usabluebook.com