

# H<sub>2</sub>Oregon

Summer 2016  
Vol. 38, No. 3

22nd Annual Summer Classic  
Seaside, Oregon  
August 22–25, 2016  
*see Upcoming Conferences, p. 19*

A publication of Oregon Association of Water Utilities  
Read H<sub>2</sub>Oregon online at [www.oawu.net](http://www.oawu.net)



# Smart Solutions. Clean Water.

tag-inc.us

541.359.3755



INTEGRATION | SCADA | CONTROLS | INSTRUMENTATION

*On-Call Technicians Available 24 hours / 7 days a week.*





# H<sub>2</sub>Oregon

Summer 2016  
Vol. 38, No. 3

## WANTED

Your photos and articles for inclusion in H<sub>2</sub>Oregon. 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 to the editor 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:  
Columbia River Gorge  
at Cascade Locks by Mike Collier

## CONTENTS

Life Examples by Jason Green, Executive Director .....	3
CS <sup>2</sup> —Common Sense in Confined Spaces by Tim Tice, Projects Manager .....	4-5
Protect Your Assets by Jeff Crowther, Wastewater Technician .....	6-7
Additional OAWU Benefits & Services .....	7
Life's Surprising Journey, Part 2 by Hans Schroeder, Circuit Rider .....	8-9
WaterPro Online Community .....	10
Water Loss Control by Scott Berry, Operations Manager .....	10-11
Prioritizing Our Time by Mike Collier, Deputy Director/Sourcewater Specialist .....	13
NRWA's Palmer Scholarship awarded to Oregon student .....	14
OAWU Expanded Services .....	14
Catching up with OAWU scholarship recipient Travis Gibson .....	15
Thanks to OAWU's 2016 Sponsors .....	15
USDA Rural Development Still Going Strong submitted by Heath Cokeley, Programs Manager/Circuit Rider .....	16-18
Upcoming Conferences .....	19
Keeping Workers Safe During Night-Time Repairs by Doug Riseden, Technical Support Manager, Krausz USA .....	20-22
Quiz Corner .....	23
NRWA Fleet Program (Ford & Chrysler) .....	24
USDA Rural Development Lowers Rates .....	25
Consumer Confidence Reports .....	25
NRWA Revolving Loan Fund .....	25
Need to Review Water or Sewer Rates? OAWU Can Help! .....	26
OAWU Training & Events Schedule .....	27
System O&M Manuals Required .....	27
Membership Application Form .....	29
Membership Roster .....	30-32

## We Appreciate our Advertisers!

Please take a moment to view their ads.

4B Engineering & Consultants .....	26	Oregon DEQ: Clean Water State Revolving Fund .....	12
American Flow Control .....	5	Oregon Meter Repair .....	11
American Leak Detection .....	9	Owen Equipment .....	26
Bancorp .....	9	PACE .....	24
BioLynceus .....	24	Pittsburg Tank & Tower .....	11
BMI .....	18	Public Works Supply .....	12
Branom Instrument Co. ....	11	Sherwin-Williams .....	7
Cascade Columbia Distribution Co. ....	18	Special Districts Assoc. of Oregon .....	22
Engineering America .....	Inside Back Cover	The Automation Group .....	Inside Front Cover
H.D. Fowler .....	9	The Ford Meter Box .....	12
Krausz .....	21	TriPac Fasteners .....	26
Lakeside Utilities (EZ Street Cold Asphalt) .....	7	USABlueBook .....	Back Cover
Neptune .....	12		

## 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

Mark Russell, Office Manager  
mrussell@oawu.net

Donna Bernt,  
Administrative/Financial Assistant  
dbernt@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

Jeff Crowther,  
Wastewater Technician  
jcrowther@oawu.net

Hans Schroeder, Circuit Rider  
hschroeder@oawu.net

Mike Collier, Deputy Director  
Sourcewater Specialist  
mcollier@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

# H<sub>2</sub>Oregon

## OAWU Officers & Board Members

### PRESIDENT

#### 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. 2019

### VICE PRESIDENT

#### Edson Pugh

Deschutes Valley Water  
881 SW Culver Hwy.  
Madras, OR 97741  
Phone: (541) 475-3849  
Fax: (541) 475-6013  
edson@dvwd.org  
Rep. Reg. 3, exp. 2017

### Board of Directors

#### Ed Butts

4B Engineering & Consultants  
3700 River Road N., Ste. 2  
Keizer, OR 97303  
Phone: (503) 589-1115  
Fax: (503) 589-1118  
epbpe@juno.com  
Assoc. Mbr. Rep. exp. 2018

#### Matt Johnson

City of Amity  
P.O. Box 159  
Amity, OR 97101  
Phone: (503) 835-4181  
mjohnson@ci.amity.or.us  
Rep. Reg. 5, exp. 2017

#### Mark Kerns

Avion Water Co.  
60813 Parrell Rd.  
Bend, OR 97702  
Phone: (541) 382-5342  
Fax: (541) 382-5390  
mark1222229@icloud.com  
Rep. Reg. 3, exp. 2018

### TREASURER

#### Micah Olson

City of Columbia City  
Mailing Address:  
1404 Barclay Way  
Newberg, OR 97132  
Phone: (971) 563-3128  
micah@olsonllc.com  
Rep. Reg. 1, exp. 2019

### SECRETARY

#### Phil Davis

Odell Water Company  
P.O. Box 166  
Odell, OR 97044  
Phone: (541) 354-1393  
Fax: (541) 354-1885  
pkdavis@hoodrivelectric.net  
Rep. Reg. 2, exp. 2017

#### Don Chandler

Nantucket Shores Water Co.  
PO Box 236  
Cloverdale, OR 97112  
Phone: (541) 490-1419  
lochsadon@yahoo.com  
Rep. Reg. 1, exp. 2013

#### Gay Melvin

City of Dufur  
PO Box 82  
Dufur, OR 97021  
Phone: (541) 467-2336  
Fax: (541) 467-2353  
gaybmelvin@ortelco.net  
Rep. Reg. 3, exp. 2018

#### Tim Lyda

City of Tillamook  
801 Laurel Ave  
Tillamook, OR 97141  
Phone: (503) 842-2343  
tlyda@tillamookor.gov  
Rep. Reg. 3, exp. 2018

### NRWA DIRECTOR

#### Russ Cooper

City of Monmouth  
151 W. Main Street  
Monmouth, OR 97361  
Phone: (503) 838-2173  
Fax: (503) 838-0201  
rcooper@ci.monmouth.or.us  
Rep. Reg. 2, exp. 2017

### PAST PRESIDENT

#### Mark Snyder

K-GB-LB Water Dist.  
P.O. Box 96  
Gleneden Beach, OR 97388  
Phone: (541) 764-2475  
Fax: (541) 764-2459  
marksnyder@kgblbwater.com  
Rep. Reg. 1 exp. 2019

#### Mike Edwards

City of Bend  
62975 Boyd Acres Rd  
Bend, OR 97701  
Phone: (541) 317-3050  
Cell: (541) 480-6530  
medwards@bendoregon.gov  
Rep. 1, exp. 2018



*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



# Life Examples

*by Jason Green, Executive Director*

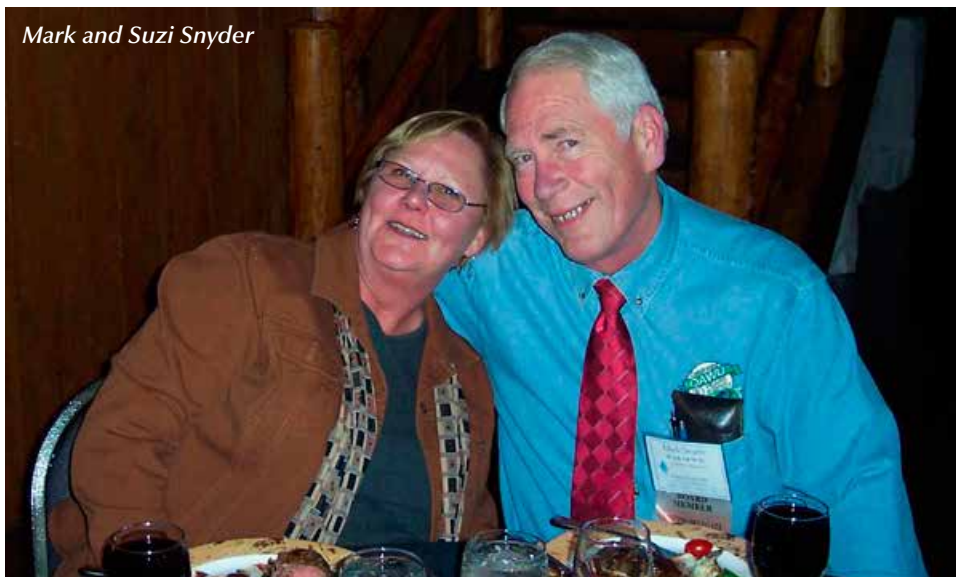


It is bitter-sweet to have worked alongside a person for years and then see them retire. Over the years, it has been my pleasure and privilege to be a part of several retirement send-offs. OAWU has had a great run of long-serving employees and board members — great folks and working relationships and we miss them when they say goodbye.

One of the many things we do as we prepare for the final day of work or service, is to discuss and remember the benefits, skills, personalities and memories they brought and shared with us over the years - they leave us these treasures to remember and occasionally contemplate. When a board member or staff person leaves, not only do we miss the person, the friendship and what they brought to the table, there is now a vacancy, a hole to be filled by someone new. This changing of the guard has a way of impacting interactions and relationships both with what is missed and with what is now new. The board or staff as a whole becomes something new as unit or body.

As I write this, the Association has received the official resignation notice and retirement of long time board member, Mark Snyder. Mark worked for many years as the Superintendent for Kernville-Gleneden Beach, Lincoln Beach Water and Wastewater Districts. He served on the OAWU board from 2001 until June 2016 and has been an active, involved board member serving three terms as board president. Considering Mark's service and character, he left us with many great life examples. My observations revealed a person who takes his responsibilities seriously and does what he says he will do. A confident and measured man who is quick to listen and help people any way he possibly can. I have always respected and appreciated Mark's ability in making it a priority to consistently support staff and co-workers and give credit when and where possible for work well done. Mark would regularly inquire how the membership, the board of directors and the OAWU staff are doing or would ask if we needed anything, or how we could improve and serve better. Placing others first and making it a priority to consider others' needs first has been a hallmark of Mr. Snyder. So it is on behalf of the membership, the board of directors and staff that we wish Mark Snyder well in retirement. We will miss your expertise, qualities and strengths you gave, but we won't say goodbye - we will say "Thank you for all the years of service and please enjoy retirement, we look forward to seeing you again soon." Best wishes! ♦

*Mark and Suzi Snyder*







# CS<sup>2</sup>—Common Sense in

*by Tim Tice, Projects Manager*

Effective January 1, 2015, rule changes for Confined Space Standards were adopted for “General Industry” (March 1, 2015 Construction). The adopted rule requires employers to identify their “permit-required” spaces, implement “alternate entry steps,” if they wish to, and review rescue methods. Let’s take a moment to highlight some points regarding the rules and present a practical approach for staying in compliance.

A key feature to a successful program is understanding the “evaluation” aspect of the program, section 4 of the rule. Not a rule, but a recommendation that you perform a routine assessment of the confined spaces annually, which seems to be appropriate for most entities. Keep in mind, the reasoning behind a routine evaluation is proving the spaces remain consistent to the initial evaluation. Another significant point is that we, who oversee such a program, need to have this information fresh in our mind. During the evaluation process we must look for spaces that will be “permit-required.” If the evaluations are completed by using the previous year’s assessment, the annual assessment should be relatively easy to complete.

Permit required spaces can be gauged by the following points:

- Contains, or has a potential to contain, a hazardous atmosphere.
- Contains a material that has the potential to engulf an entrant.
- Has an internal configuration such that an entrant could become trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section.
- Contains any other recognized serious safety or health hazard that can inhibit an entrant’s ability to escape unaided.

If you know of or find a space(s) that exists within your facility, begin to outline a permit, section 5 of the rules explains the requirements for “permit-required” spaces. The rules give seven major points with 23 minor points needed for proper paperwork. There are various methods of filing paperwork, the main point is to ensure the permit-required paperwork is completed, kept separated from other confined space information and, most importantly, understood by staff.

Upon the initial findings of permit-required spaces, as a lead person, the first question is “can we enter these spaces under ‘alternate entry’?” If you must enter a space to perform an evaluation, to prove (A) and (B) below, it must be performed under the requirements in section 5. The details that allow alternate entry are found in section 10 of the rule and are summed up in two points.

(A) All hazards have been eliminated; or

(B) All physical hazards, if any, have been eliminated and all atmospheric hazards are controlled with continuous ventilation.

The “alternate entry” has a couple key notes regarding lock-out and tag-out, as well as, continuous ventilation. Familiarity with the rule will help with the development and implementation of “alternate entry” and the paperwork associated with it. An example of one specific item for “alternate entry” is “performing

# Confined Spaces

continuous monitoring for all atmospheric hazards during the entry.” All in all, section 10 of the “alternate entry” portion of the confined space program has ten major points and 28 minor points, not much different from the number of points found in section 5.

Once the confined spaces are identified at a facility, we can note the hazardous conditions, categorize those spaces with similar hazard conditions, and create paper entry permits to use in the field. Ensure the categorization method is consistent and known to all workers who work in and around a confined space.

An entry permit, the written authorization to enter and perform work, should be specific to any given space. Where a different hazard exists, highlight those hazards on the permit itself. A wastewater lift station will not have the same hazardous conditions or concerns as a meter vault. Categorize them as “A” and “B,” using master copies for all

relevant spaces. With this approach, as job tasks begin, the paperwork becomes a tool to create a safer process.

Realistically, if a team were routinely performing work in confined spaces (2-3 tasks/month), only then does the task become repetitive. Due to the nature of confined space work, the potential for harmful conditions is increased when it is a repetitive task. Throw the psychological effect into the mix and our awareness requirements should stay at a heightened level.

If you wish to discuss aspects of the confined space program, give our office a call. We would be happy to share our experiences, discuss methods that work, and emphasize key areas.

The best that life has to offer! ♦

Oregon OSHA: <http://orosha.org/pdf/notices/adopted2014/ao52014-div2J-ltr.pdf>

Oregon OSHA: [http://orosha.org/pdf/rules/division\\_2/div2\\_j.pdf](http://orosha.org/pdf/rules/division_2/div2_j.pdf)

## AMERICAN FLOW CONTROL. PART OF THE AMERICAN LANDSCAPE.



Small towns, big cities and Main Street, USA, wherever you go, there we are. **AMERICAN** has been part of the landscape for over a century. While our past is one of innovation, the same is true of our future. New products are always in the pipeline. When it comes to someone you can trust with your valve and hydrant needs, look no further than **AMERICAN**. The company where strength, dependability and integrity just come with the territory.



RW GATE VALVES



GIS



CAPTIVATER

INNOVATION. IT'S PART OF EVERYTHING WE DO.



**AMERICAN**

FLOW CONTROL

THE RIGHT WAY

PO Box 2727, Birmingham, AL 35207 Phone: 1-800-326-8051 • Fax: 1-800-610-3569  
EOE/Minority/Female/Veteran/Disability

[www.american-usa.com/firehydrants](http://www.american-usa.com/firehydrants)

DUCTILE IRON PIPE

FLOW CONTROL

INTERNATIONAL

SPIRALWELD PIPE

STEEL PIPE





# Protect Your Assets

*by Jeff Crowther, Wastewater Technician*

For public works staff, a lot of complaints come from the public regarding the items that they can visually see, such as a park with high grass or a street that is in poor repair or has potholes.

As water and wastewater professionals, our underground utilities are out of sight and out of mind. As long as the water flows into their homes and the wastewater flows away, our customers are happy and content. The complaints start coming in from citizens and council when they see the roadway trench patch failing from poor repair and/or a poor installation.

It is our responsibility to see that the contractor doing the installation or repair is protecting our assets. We need to be onsite and inspecting not only the line installation, but also the backfill and street repair.

Installing new piping can be a challenge, especially in areas where other infrastructure already exists. A balance has to be struck between fixing or updating the underground system, and maintaining the asphalt or other surfacing material of the roadway. With some simple guidelines, we can have both new underground pipes and a roadway that will last for the full expected design life.

The first thing to look into is the age of the roadway where we are going to create the trench. Many jurisdictions create a moratorium over the roadway for a minimum of 3–5 years after roadway improvements. This is to stop trenching that occurs just after updates and can leave the new road looking haggard. This moratorium would typically require a 2" grind inlay for a distance of at least the width of the roadway on either side of the saw-cut and trenching.

If new piping is to be installed in an older roadway a T-cut procedure can be used. Many jurisdictions have created details for this procedure, which can be used for your own jurisdiction. Where available, we should always use local geotechnical specifications, but if this information is not available, I like to use the Clean Water Services details as a guide. These details specify both the T-cut procedure and the backfill requirements, both within roadway right-of-way and outside of the right-of-way.

These details call for the asphalt replaced following the trenching to be a minimum of the width of the trench plus 6" on either side. When saw-cutting for the trench, we should always remember to make it a minimum of your compactor plus 2". We should also make sure that the extra 6" of saw-cut surface on either side of the trench is done after the initial trench and backfill, so that we can have a clean saw-cut with no chipping from the trench excavation.

When backfilling the trench, we should pay special attention to weather we are within the right-of-way or outside of it. The backfill within the



right-of-way should be able to withstand the loads of the truck traffic expected on the roadway. Clean Water Services detail 590 provides a standard backfill for both situations, and is my go to reference when no other information exists. This detail calls for ¾"-0" rock within the pipe bedding and cover zones compacted to 90% per AASHTO T99, and ¾"-0" rock compacted to 95% per AASHTO T99 within 48" of the wearing course. The wearing course should be restored to its original state following construction.

The bottom line is jurisdictions should have clear and concise guidelines for contractors installing or repairing infrastructure. We want to make sure that our assets are protected which includes the integrity of the roadway. Don't let a contractor perform poor workmanship on a road repair because it will be something that the citizens will have to look at for many years to come. ♦

## ADDITIONAL OAWU BENEFITS & SERVICES

Sewer I&I Testing • Smoke Blower • Well Testing • Line Locator, Leak Detector, Etc.  
Operator of Record Services • CCR Templates & Report Preparation  
System Performance & Evaluation • O&M Manuals • On-Site Training & Classes  
Water Conservation Management Planning • Lagoon Profiling  
Job Referrals, Announcement & Services • Rate Studies

**OAWU has extended its services to include DRC,  
Operator of Record, Operations, and Construction projects!  
Please contact us if you need any help.**

**FOR AVAILABILITY & PRICING  
CALL OAWU: (503) 837-1212 OR VISIT OAWU.NET**



**SHERWIN-WILLIAMS®**  
**Protective & Marine Coatings**

**Michael A. Zach**

Project Development Manager  
NACE CIP Level 3 #22138

**The Sherwin-Williams Company**

3326 160th Avenue SE, Suite 310, Bellevue, WA 98008  
mike.zach@Sherwin.com protective.sherwin-williams.com  
Ph: 425-643-2017 ext 114 Cell: 206-817-5137 Fax: 425-643-8653



# WORKS IN WATER • GUARANTEED PERMANENT

Available in 50 lb bags, bulk sacks and loose bulk

For more info contact **W. R. Bill Bailey**

**503-222-6421**

**www.ezstreetasphalt.com**

EZ Street® and the EZ Street Logo are registered trademarks of Asphalt Research Technology, Inc. © Copyright 2013





# Life's Surprising Journey,

by Hans Schroeder, Circuit Rider

During my travels around Oregon I met with an operations specialist that is a close friend of mine. Our daughters are friends; we have shared many “away from work activities,” elk hunting, and family BBQs. We visited over lunch for awhile and he shared with me that he found out that he had a sister in Washington. He excitedly told me that he went up there and met her. He said it was an amazing experience.

I asked if he thought he might have any other siblings. He stated that in the past, his father had been humble and slightly embarrassed when mentioning that there were other siblings. My stomach was stirring. I had a picture of a birth certificate in my phone pictures that surely proved there was at least one other sibling; the name on the birth certificate was exactly the same as his.

As my heart was pounding I asked myself, *How do I share this information?* Knowing the operator as well as I do, I knew he would openly accept the information I was about to share with him. I opened my phone pictures and showed him the birth certificate image. He looked at it and says, “Hey, how’d you get my birth certificate?” I said look at it closer. He then said, “That’s 3 years before I was born!” With a goofy look he asked, “Schroeder, what’s going on here?”

I stated you’re absolutely correct, I am confident you have a brother! You two look so much alike.

He then says, “Well let me know, who is this guy? What does he do? Where does he live? How do you know him?”

So I then started explaining that he is a water operations specialist such as yourself. I’m surprised you two haven’t seen each other at an OAWU class or conference. He was so amazed, I gave him his name (I had previously been approved to do so), which was the same as the birth certificate, except the last name was changed. I told him his newfound brother has been watching him on Facebook. He loves how you are so family-oriented and how all your posted pictures share about your family, kids and trips. He then immediately got on Facebook and found him and friended him. I then said “Oh watch, I’ll be getting a call or text from your brother any minute now.”

Just as I predicted, boom! I received a text stating, “You won’t believe what I just received on Facebook.” So I replied, “What?” He said, I just “friended” my brother. Both were so elated!

Since this reunion has begun, the two brothers have spent many endless hours catching up. Sharing about family, relations, children, hunting,



# Part 2

fishing stories and so much more. They have met on multiple occasions, at their children's sporting events and even to the coast for long weekend trips. It has been so exciting to receive texts, pictures and calls from both of them sharing in their new found relationship. It has just amazed me how two families have melded together in such a short amount of time—it was just meant to be. Two water operation specialists at opposite ends of the state have become inseparable.

There is a family reunion planned this summer that I have even been invited to. I am so looking forward to attending the reunion and watching this new family bond that I helped to unite! It is so enjoyable being a circuit rider, being able to meet so many people along the way. Many have become good friends of mine outside of work. It has been my pleasure to watch this relationship blossom. ♦

## Electronic Leak Detection and Correlator Leak Surveys



Portland • Eugene • Salem • Medford

**888.777.5325**

[AmericanLeakDetection.com](http://AmericanLeakDetection.com)



**H.D. FOWLER  
COMPANY**

28800 SW Boberg Rd  
Wilsonville, OR 97070

**Ed Pettett**  
*Outside Sales*

503-783-3490  
Cell 503-476-2804  
[edp@hdfowler.com](mailto:edp@hdfowler.com)



Rex Lesueur,  
Licensed Agent &  
Consultant,  
National Speaker  
& Author

**Attn: Private & Association Water Companies**

### **Finally An Insurance Policy Designed Specifically For You, Save up to 26% off Your Current Premium and Get Individualized Protection for Your Water District!**

Most water districts end up purchasing costly inadequate insurance protection that fails to provide you protection from the every day risks your water district faces. **WaterPro's** insurance program protects your district's property and its liability exposures including protection for risks like **Accidental Pollution, Failure to Supply, Equipment damage** to pumps, gages, and electrical boards, **Wrongful Acts of Boards, Employment Practices** along with a whole smorgasbord of other add-ons too numerous to list here! Stop paying for mediocre insurance coverage upgrade your protection now! **Call Rex 800-452-6826**

#### **Don't Take Our Word for It, Our Customers Say It Best:**

**Rex** provides **EXCELLENT** service, he recently went to bat for our little **Water District** and obtained **payment on a claim** that the insurance company denied! **We Don't Worry, We Have Rex**, *Erica Anderson, Christmas Valley Domestic Water Supply, Christmas Valley Or.*

**"Rex's WaterPro** program is one of the most comprehensive insurance programs I've ever seen. He was able to provide the **Oregon Association Water Utilities** with a quality program at a **great price.**" *Jason Green, Executive Director*

**Water  
PRO**

**BANCORP**  
*Insurance*

**Don't Worry, Call Rex at 1-800-452-6826 Today!**



# Water Loss Control

by Scott Berry, Operations Manager

In my travels throughout the state of Oregon speaking with water operators, there is a common theme in just about all of those conversations. Everyone is trying to come up with ways to save money in their operating budget; to do more with less. Water utilities can no longer tolerate water loss in water distribution systems. Tightening regulations about the amount of water that is lost to leakage, increases in pumping, treatment and operational costs make these losses prohibitive.

In general, a 10 to 20 percent unaccounted-for loss rate is considered acceptable. My preference is to figure the percentage, as well as, track the number of gallons of lost water in order to keep a better perspective on the scope of the problem. A 5 gpm leak (216,000 gallons per month) could be a vastly different percentage in June than it will be in December when the production rate is much lower. Most of the publications on this topic will tell you to assess the cost/benefit of leak detection and repair. My opinion on this is simple; find them and fix them.

Large leaks do not necessarily contribute to a greater volume of lost water over time, particularly if water reaches the surface; they are usually found quickly, isolated and repaired. Undetected leaks, even small ones can lead to large quantities of lost water since these leaks might exist for long periods of time. The silver lining here is that small leaks are easier to detect using an audible leak detector. The most difficult leaks to detect and repair are usually those understream crossings.

Unmetered losses include all unauthorized uses and perceived losses from accounting errors, malfunctioning distribution system controls, thefts, inaccurate meters or leaks. Some unauthorized uses may be identifiable. Some unmetered water is taken for authorized purposes, such as fire fighting and flushing. These

Come on in! Check out ALL the benefits  
and information available only to members!

## WaterPro®

Online Community



### Where Water Pros Go!

<http://waterprocommunity.org>





quantities are usually fairly small and should be estimated as an accounted-for amount, if possible.

The primary cause of excessive unaccounted-for water is usually leaks. There are many possible causes of leaks, and often a combination of factors leads to their occurrence. The material, composition, age, and joining methods of the distribution system components can influence leak occurrence. Another related factor is the quality of the initial installation of distribution system components.

Water conditions are also a factor, including: temperature, aggressiveness, presence of sediment and pressure. External conditions, such as: stray electric current, contact with other structures, stress from traffic vibrations, frost loads, and freezing soil around a pipe can also contribute to leaks.

All water plants will benefit from a water accounting system that helps track water throughout the distribution

## Calculating Unaccounted-for Water as a Percentage of Total Production

Percentage of unaccounted-for water is the difference between total water produced at the source or the treatment facility and the amount of water that has been accounted for by all of the customer meters for a specific time period.

$$\frac{(\text{production} - \text{metered use}) \times 100\%}{(\text{production})}$$

system and identifies areas that may need attention, particularly large volumes of unaccounted-for water.

Determine how long it has been since the production meters were calibrated and do so if needed. Are your customer service meters reading reliably? Once you have determined that the meters are accurate and are still getting higher than 15% unmetered loss rate, it's time to hit the ground.

In the next issue: Leak detection and repair strategy. ♦

### PITTSBURG TANK & TOWER MAINTENANCE CO., INC.

**SAVE!** We have a crew in  
**YOUR AREA!**

**Inspections:** Wet • Dry • ROV (Robotic)

**Repair:** Clean • Paint • Insulation

**New & Used:** Relocation • Erections • Dismantles

**Tanks:** Elevated • Underground • Ground Storage

ROV inspections can be viewed on TV console during inspection - DVD provided.

All inspections included bound reports, recommendations and cost estimates.

**Patrick Heltsley 270-826-9000 Ext. 253**



**OREGON METER REPAIR, LLC**

**DAVE SCHLUCKEBIER**

President

Mobile: (503) 970-7881

meterdave@hotmail.com

### Branom Instrument Co.

*Since 1947*



*We are a manufacturer's representative that understands  
solutions for water/waste water applications and  
have a wide variety of products and solutions  
to meet your water/waste  
water needs.*

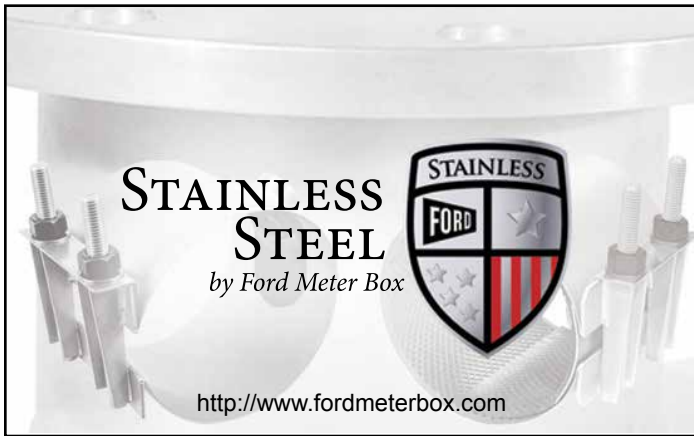


- Level Controls
- Flow Meters
- Wireless
- Pressure Switches
- Pressure Transmitter
- Valve Positioners

**www.branom.com**

**800-767-6051**

**Seattle | Spokane | Portland | Boise | W. Sacramento**



**STAINLESS STEEL**  
by Ford Meter Box

<http://www.fordmeterbox.com>

**PUBLIC WORKS SUPPLY**  
*Your One Stop Safety Shop*




**Greg McDonald**  
503-678-2981  
[macsafety@publicworkssupply.com](mailto:macsafety@publicworkssupply.com)

10751 Oak Street Suite #2 Donald OR 97020 [www.publicworkssupply.com](http://www.publicworkssupply.com)

ARB<sup>®</sup> UTILITY MANAGEMENT SYSTEMS™



**MORE COVERAGE THAN EVER.**

**GET YOUR 2X WITH THE v4.**

The R900<sup>®</sup> Gateway v4 fixed network data collector



**NEPTUNE**  
TECHNOLOGY GROUP

TAKE CONTROL | [neptunetg.com](http://neptunetg.com)



**Clean Water**  
State Revolving Fund

**Low Cost Loans to Improve Wastewater and Stormwater**

Contact CWSRF for the **BEST LOAN RATES** to public agencies for the planning, design or construction projects that prevent or mitigate water pollution.



(503) 229-LOAN  
[CWSRFinfo@deq.state.or.us](mailto:CWSRFinfo@deq.state.or.us)

Scan QR code to visit:  
[www.deq.state.or.us/wq/loans/loans.htm](http://www.deq.state.or.us/wq/loans/loans.htm)



**DEQ**  
State of Oregon  
Department of  
Environmental  
Quality



# Prioritizing Our Time

*by Mike Collier, Deputy Director/Sourcewater Specialist*



What do you think of when you read the title of this article? Most probably think of the tasks we need to get done at work. I agree that is an important part of life we need to set priorities and work toward completing tasks in a, somewhat, orderly process. We will briefly go through this idea in this article, but I also want to consider how we prioritize our time throughout the day, month, and year in regard to our personal time, time spent off the clock.

With spring and summer here we start to have nice weather, warm sun, and longer days to enjoy. However, we often have multiple projects at work and home that have been building up over the wet, short days of fall and winter. Do we choose to spend all our time on the tasks that need to get done, or do we take time for ourselves and our families to reconnect and recreate during this time of the year? Are these things mutually exclusive or is there a way to complete all of these important things?

To have a healthy life we need to include time for ourselves and our families and not just work all the time, especially during the beautiful Oregon spring and summer. To do this we need to learn how to prioritize our time. This means we need to be efficient with our time, both at work and at home, this probably means we need to plan our time out and schedule things beforehand.

I know this can be difficult and counter to what some of us want to do naturally. I also do recognize that there are situations when it is beneficial to be spontaneous. Having stated that, let's begin with the workday. To help prioritize this time, I tend to ask myself a few questions: When is the task due? How long will it take? How important is it? Is it a need or a want? Is it vital, for health or safety? Was it a priority of a boss/board/council?

Also, spending some time at the beginning and end of each day (right when you arrive at the office and right before you leave) to think over the accomplishments of the day and make a plan for tomorrow are great strategies to be able to better handle the business that occurs during each work day.

Now for our personal life. How can we prioritize our time here? Making sure we put tasks, like painting, washing, yardwork, behind our most important relationships (kids or spouse). I try to think of it this way, what is the worst thing that could happen if I neglect painting my house for one extra month? Now what is the worst thing that can happen for not putting some time and energy into my relationship with my wife or kids? If there is an emergency on the house or at work, or if you already have plans scheduled that is one thing. I try not to make it a habit to put my family after everything else in my life.

We also have to make some time for exercise (particularly if you are a "Desk Jockey") this can be with the family (two birds, one stone – like family basketball Wednesdays), it can be used as time to decompress after a long day, or in the morning it can be used to begin preparing for your day. Even a simple walk can be useful for accomplishing this.

I know this is a short article for a pretty extensive topic, but I hope it just gives us all a few moments to think about the way we prioritize what we do and to take some time to ask the questions needed to help us improve on this area of our lives. ♦



# NRWA's Palmer Scholarship awarded to Oregon student



DUNCAN, Okla. – Jenni Green, a senior at Nestucca High School, has been awarded a Joe and Jean Palmer Endowment Scholarship by the National Rural Water Association. The Palmer Scholarship is a four-year scholarship valued at \$8,000, which is awarded to the children and step-children of the Rural Water staff across the nation.

Jenni is the daughter of Jason Green, Executive Director of the Oregon Association of Water Utilities. She plans to attend Western Oregon University and study Elementary Education.

Jenni has a grade point average of 3.87. She was a member of the student council, received varsity letters in volleyball, softball and cheer and was the Cheerleading Captain.

Palmer Scholarship recipients are selected by the NRWA Scholarship Committee, based on the applicant's academic record, awards, honors, leadership, activities and content of a 500-word essay. The scholarship honors the memory of Joe and Jean Palmer, and reflects their character and contributions to the rural water industry. Joe Palmer was a retired engineer, co-founder the Georgia Rural Water Association and served as President of NRWA from 1994 to 1996. Jean Palmer was a former science and chemistry teacher.

## OAWU Expanded Services

### Operations

Need a long-term or temporary operator for your system? We're here to help. OAWU now offers DRC, Operator of Record, Operations, and Management of water and wastewater systems. Our team of qualified professionals can assist your utility in day-to-day operations as well as provide stability and longevity in meeting regulatory requirements.



### Projects

Let us bid your projects: smoke testing, valve exercising, installation of pipe, valve, service connections, hydrants and more.



### Tailored Training

OAWU can provide training to meet your needs on specific topics. We offer onsite training, group facilitation, and board or council training. We can also help with public meetings and workshops!

Contact OAWU for more details: [office@oawu.net](mailto:office@oawu.net) or 503-837-1212.

[www.oawu.net](http://www.oawu.net)



# Catching up with OAWU scholarship recipient Travis Gibson

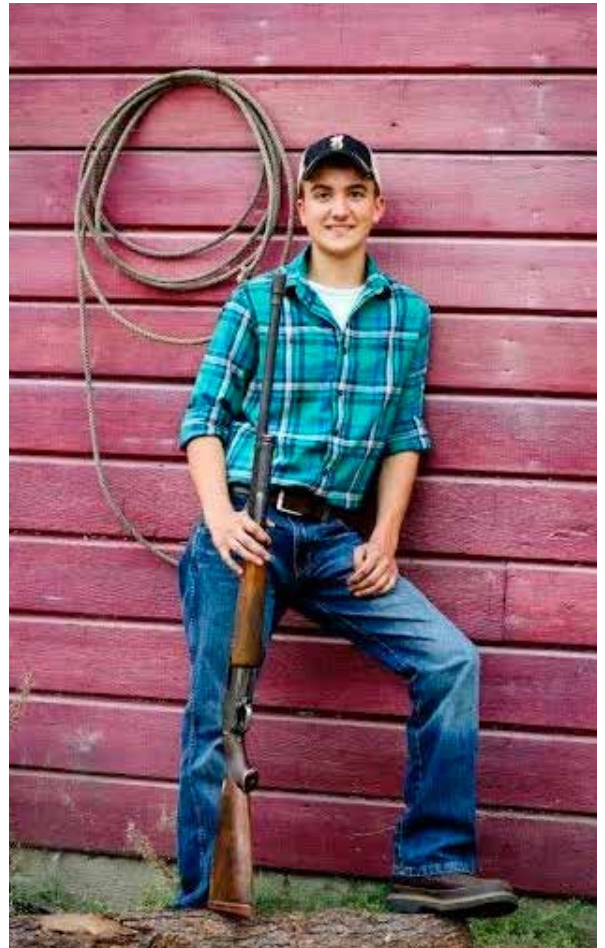
My name is Travis Gibson, and was born and raised in Monmouth, Oregon. Ever since I can remember I have had a passion for the outdoors, which is why I believe that I was drawn so strongly to the water and wastewater field.

My main hobbies include duck hunting, deer and elk hunting, as well as fishing, hiking, and exploring the amazing places that the Pacific Northwest has to offer.

I made the decision to not play sports in high school. Instead of playing sports, I chose to become involved with the FFA and I also traveled to competitions around the entire state of Oregon and competed at trapshooting events. Throughout this experience I was able to achieve my biggest goal, winning a state championship in both of the events that I competed in.

I graduated from Central High School in 2015, with my heart set on enrolling in the Water, Environment and Technology Program at Linn Benton Community College. I am currently finishing up my first year of the program, and I could not be happier with my decision. I have gained countless amounts of knowledge pertaining to watersheds, water and wastewater collections/treatment systems, as well as, the infrastructure that goes along with them.

I want to thank OAWU and Jeff Swanson for this scholarship. I am extremely grateful.



# A Special Thanks to Our 2016 Sponsors

## SILVER SPONSORS

## EJ HD Fowler Kennedy/M&H Valve

## BRONZE SPONSORS

BergerABAM   CoBank   RH2 Engineering

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

TO BECOME A SPONSOR, CALL 503-837-1212



# USDA Rural Development

*From USDA Rural Development • Submitted by Heath Cokeley, Programs Manager*

For nearly 80 years, USDA Rural Development (RD) has worked with rural America's smallest and most needy communities. The current issues surrounding water in our country, including drought, contamination, and aging infrastructure, are just as critical now as they were 80 years ago. The need for RD's water programs remains high.

Since 2009, we have helped more than 18 million rural residents receive new or improved water and waste disposal services, emergency water assistance, and technical help. Our assistance includes new or upgraded water and sewage treatment plants, equipment, wells, and for drought-afflicted communities, the delivery of potable water.

In fiscal year (FY) 2015, RD funded more than \$1.6 billion in loans, grants, and guarantees in all 50 states, and we rely on the work of our partners, like the National Rural Water Association, to help us provide essential water and waste services to our rural communities. Now is a great time for the communities you work with to seek funding – RD's infrastructure loans and grants are available at historically low interest rates, and we have improved our processes to help our customers get the funding they need in a timely manner. Eligible projects can seek funding at the lowest rates the program has seen in many decades, ranging from 1.75 percent to 2.875 percent. The next quarterly rate adjustment occurs July 1.

Our customer service goal is for our loan and grant applicants to receive funding decisions within 45 days of submitting a complete application. We have proven this goal is attainable. In FY 2016, the Charleston Sanitary District in the city of Coos Bay, Oregon received a \$5 million loan and a \$3.5 million grant to upgrade its wastewater treatment plant within 23 days of submitting its application to RD. In Illinois, the Curran-Gardner Townships Public Water District in Sangamon County was awarded a \$4 million loan to expand its water treatment plant within 16 days of submitting its completed application. And in record-setting time, the Kent County Levy Court in Milford, Delaware received a \$3 million loan to upgrade its wastewater treatment plant within three days.

To expedite the loan and grant process, we have made use of improved technologies, streamlined our underwriting processes, and increased our employee training and engagement as well as our collaboration with other agencies. On September 28, 2015, we launched RD Apply at the National Rural Water Association Water Pro Conference in Oklahoma City. RD Apply is our new online application system. Applicants can register to use the system on any electronic device, and then complete and submit their applications online. Since its launch, RD staff has attended rural water conferences and other events across the country to demonstrate RD





# nt: Still Going Strong

er/Circuit Rider

Apply to community leaders, engineers, and circuit riders. To date, over 131 applications have been filed using RD Apply. In the fall of 2016 we will unveil our new electronic, interactive Preliminary Engineering Report, ePER at the NRWA annual conference in Orlando. Don't miss your opportunity to give it a test drive! Visit <http://rdapply.usda.gov> for more information.

In FY 2014, we began streamlining our underwriting process by introducing new procedures to decrease our processing times for Emergency and Imminent Community Water Assistance Grant (ECWAG) applications. This program helps eligible communities prepare for, or recover from, an emergency that threatens the availability of safe, reliable drinking water for households and businesses. As a result of the streamlined process, we have had a record increase






## Rural Utilities Service

**Since 2009**  
Water Loan Interest Rates have fallen by over a third

Interest rates now just **1.75%** to **2.875%**

**40-Year Repayment Terms**

**Take advantage of these historically low rates! Apply now!**



## USDA Rural Development still meeting water, wastewater needs of rural America nearly 80 years after its founding *(continued from previous page)*

in the number of ECWAG grants we have processed in the last two FYs. We are now revamping our guaranteed loan program.

RD is intensifying employee training and customer outreach efforts. Making sure our staff has the knowledge and skills to effectively deliver our programs is critical to the success of the program.

Collaboration with other state and federal agencies remains a priority. Our partnership with the Environmental Protection Agency on a rural system sustainability assessment tool and a sustainability workshop guide, also known as "Workshop in a Box," has proven to be very successful. The guides are available online at <http://www.rd.usda.gov/programs-services/services/sustainable-management-tools>.

The assessment tool gives systems a simple and objective way to evaluate their strengths and areas for improvement. Together, we have trained more than 1,600 trainers to facilitate the workshop. Workshops have been held in more than 140 locations across the country. Through this program and many more collaborative efforts, we are building capacity and leveraging knowledge and financial resources.

To learn more about how RD can help meet the water and waste needs of your rural communities, please visit our website: <http://www.rd.usda.gov/programs-services/all-programs/water-environmental-programs> or contact your local USDA office: <http://www.rd.usda.gov/contact-us/state-offices>.

We look forward to working with you and the rural communities we all serve! ♦



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

CONTACT US AT:

**(800) 841-7689**

**[www.bmi-backflow.com](http://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"*



**Primary Coagulants** Alum • PAC • ACH • Organic Polymers

**Filter Aides**

**Chlorine** Sod Hypochlorite • Cl Cyl • Dry Calcium Hypochlorate

**Dechlorination** Sodium Bisulfate • Calcium Thiosulfate • Ascorbic Acid

**pH Control** Sodium Bisulfate

**Corrosion Inhibitors** Ortho & Poly Phosphates • Sequestering Agents • Potassium Permanganate • Copper Sulfate

**Fluorides** Activated Carbon • Hydrogen Peroxide • Ferric Chloride • Phosphoric Acid • Citric Acid • Sodium Silicate

**Specialty Products** Defoamers • Odor Control

**SPECIALIZING IN A COMPLETE LINE OF MUNICIPAL WATER TREATMENT CHEMICALS**

Call for anything special!

**Jeff Zachman & Joe Price, Technical & Sales**

Jeff: Office/Fax 503-636-8252, Pager 503-299-0775, [jeffz@casdecolumbia.com](mailto:jeffz@casdecolumbia.com)

Joe: Office 503-266-2959, [joep@casdecolumbia.com](mailto:joep@casdecolumbia.com)

**Orders: Portland 503-625-5293, Toll-Free 887-625-5293**

**Fax 503-625-4335**

***Serving the Pacific Northwest since 1926***



# UPCOMING CONFERENCES

22nd Annual Summer Classic  
Seaside, Oregon  
August 22–25, 2016



18th Annual  
End of Year Conference



Hood River  
December 5–8, 2016

2016 Fall Operators  
Conference  
in Beaverton  
Nov. 7–10, 2016



# Keeping Workers Safe During Night-

Working at night on pipe repairs is always more difficult than during the day. Workers are usually tired, having already worked a full day, and visibility is greatly reduced due to shadows, darkness and poor lighting at the worksite. Throw in drivers who are also tired and perhaps driving faster than usual due to reduced traffic, and you have the makings of a high-risk situation.

Your employees are your most valuable asset, so every precaution should be taken to make sure they come home safely every day.

Here are six things to ensure your night time workers are safe, and get the job done effectively.

## 1. Move carefully and deliberately on the worksite

Many times, workers will want to get the job done quickly and skip some steps. This is understandable, but it's important to remind them to slow down and work more cautiously than they do during the day. Even if they are very familiar with performing certain repairs, dark areas and shadows can hinder their perception of risk.

Planning and communication become crucial during night-time operations. Before the job starts, supervisors should have a brief meeting to ensure all team members understand what will take place at the worksite, what their role is, and where they will be located throughout the night.

Plan your work and work your plan!

Make sure everything is done with a focus on safety. This includes wearing reflective clothing in accordance with the law and using a trench box or shoring to ensure that the trench doesn't collapse while workers are inside. There are many who never use a trench box because it gets in the way of some repairs. At night, the use of trench boxes and shoring is even more critical. Make trench boxes a normal part of every excavation, and never put speed ahead of safety.

## 2. Have the right repair products on hand for every possibility

Always make sure that you have repair products on hand for every situation. There is nothing worse than not having the right parts during an emergency repair. Poor planning results in the job taking longer to complete, delays in returning water service to normal, and disgruntled customers.

Krausz designs and manufactures a variety of repair couplings that are quick and easy to install, and are

extremely useful for night conditions. The HYMAX VERSA coupling can attach to two pipes of differing diameters and materials, which comes in handy when the exact material or diameter of the pipe are not known in advance.

The coupling also features top-facing bolts which are simple to tighten, and drastically cut installers' repair time. The product has a stab-on design and does not need to be disassembled – there is nothing more aggravating for an operator than losing a bolt in a water-filled ditch at night.

Another unique feature is its MAG dry anti-galling process that prevents galling, enables repeated bolt tightening and eliminates the need to grease the bolts, preventing dust and dirt build-up.

## 3. Keep a close eye on the crew

Supervisors need to keep a close eye on workers who will be tired from working a full day and prone to making mistakes. Supervisors should patrol their work area to see how workers are doing, and offer food and drink on a regular basis. Flaggers in particular should be checked as they play a critical role in making sure night time operations are safe.

Crews want to make the repair and then get some rest before having to get up and do it all over again. A lack of rest or sleep accumulates over time. It's important that crews are not run down to the point where they become exhausted and unable to perform. Provide them with the proper tools and repair parts to get the job done.



*The HYMAX VERSA coupling can attach to pipes of differing diameters and materials.*



# Time Repairs

by Doug Riseden  
Technical Support Manager, Krausz USA

## 4. Keep work areas lit and clear

In the interests of saving time, sometimes workers will use the lights of the backhoe to do this job without auxiliary lighting and a generator. These lights will not supply enough illumination for the worksite and compromise safety.

Use floodlights to illuminate any equipment crossings, and other areas where crew members will be working. Flaggers in particular should be well lit to ensure their own safety, and the safety of the work zone. If drivers can't see the flagger, his or her ability to slow down, divert or stop traffic is hindered.

Floodlights can also blind drivers entering a work zone. Once lights are set, a worker should drive through the area to observe the lights' positioning and make adjustments as necessary. The use of self-righting work lights are a great way to provide light without causing it to shine in motorists' eyes.

Keep the work area also clear of obstacles, tools, and equipment.



Use floodlights to illuminate areas where crew will be working.

## NEWEST MEMBER OF THE HYMAX® FAMILY THE TWO-BOLT HYMAX CLAMP\*\*

# HYMAX®

Repair the past. Connect the future.



**weftec**  
the water quality event  
**WaterPro**

Meet us at:  
weftec → Booth #457  
WaterPro → Booth #1101



- Only 2 bolts = less time in the ditch\*
- The most durable permanent repair clamp
- Available in nominal sizes 3"-12"

### FAMILY MEMBERS



HYMAX COUPLING



HYMAX VERSA



HYMAX GRIP



\*Product lengths of 15" and higher have more than 2 bolts

**KRAUSZ** is the creator of HYMAX

For more info, visit [krauszusa.com](http://krauszusa.com) or call 855-457-2879 (855-4KRAUSZ)

The use of rotating or flashing amber lights on service vehicles is necessary and required by law in most states, however, these lights can be their own hazard. They can be very bright and blind drivers who are traveling the roadways and prevent safe driving. Wherever possible, direct lights so drivers can see properly as they drive through to ensure worker safety.

## 5. Manage traffic

If possible, close the roadway where the repairs are taking place and direct traffic away.

If you can't close the roadway, place warning signs or lights in a way that will give motorists more time to react and slowdown before reaching the work area. Ensure that your signs are clean and have good reflectivity.

Make the work zone as large as possible to give employees more buffer and to keep them safe. After the repair is completed and the roadway re-opened, do several drive-throughs to make sure that the road is clear and the road repair is safe for the public's use.

## 6. Notify the public

Make every effort to contact law enforcement, fire and rescue services, emergency dispatch centers and the general public about the night time operation.

Notify the above organizations, and local radio and television stations, in advance by sending a concise email and following up by phone. Include information about where the repair is taking place, why it's happening and any roads that will be closed off.

These agencies and media outlets will appreciate the information, and keep the community aware of the repair. ♦

*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.*



## SPECIAL DISTRICTS INSURANCE SERVICES

**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  
PO Box 12613 | Salem OR 97309-0613  
TOLL-FREE: 800-285-5461 | PHONE: 503-371-8667  
E-MAIL: [underwriting@sdao.com](mailto:underwriting@sdao.com) | WEB: [www.sdao.com](http://www.sdao.com)





# QUIZ CORNER

1. You have just rewired the motor on a centrifugal pump. The pump is now running but generating little pressure and flow. What is the most likely cause?
  - A. Speed of the impeller is too high
  - B. Pump is primed
  - C. Water leak in seal
  - D. Wrong direction of impeller rotation from improper wiring
2. A Pump Curve plots the relationship between the system head and the \_\_\_\_\_.
  - A. Fluid temperature
  - B. Flow
  - C. Impeller type
  - D. Casing type
3. A reduced pressure zone device consists of 2 spring-loaded check valves with a(n):
  - A. Air gap located between them
  - B. Vacuum Breaker located between them
  - C. Pressure regulated relief located between them
  - D. none of the above
4. What type of meter consists of a chamber of known size that measures the volume of water flowing through it by means of a moving piston or disk?
  - A. Turbine
  - B. Positive-displacement
  - C. Venturi
  - D. Proportional
5. The idea of self-government is in the first words of the Constitution. What are these words?
  - A. We the People.
  - B. In God We Trust.
  - C. Freedom and Liberty.
  - D. Liberty for all.
6. Which of the following are two rights from the Declaration of Independence?
  - A. Right to practice any religion and right to free speech.
  - B. Right to work and right to vote.
  - C. Right to travel and right to happiness.
  - D. Right to life and right to liberty.
7. When working in a confined space, a permit is NOT required when the space can be maintained by using?
  - A. Continued mechanical ventilation
  - B. When gas meters show non detected limits on all gases
  - C. Gas meter shows oxygen level is above 18.5%
  - D. On all horizontal configured spaces
8. Acceptable oxygen range levels for confined space entry are 16.5% to 18.5%.
  - A. True
  - B. False
9. According to energy conservation experts, homeowners can save energy by using cooler water when washing clothes. Using hot water for both washing and rinsing uses how much more energy than using warm wash and cold rinse options?
  - A. Slightly more
  - B. Twice as much
  - C. 3.5 times as much
  - D. Five times as much
10. Which test is used to determine the correct dose when using polymer solutions?
  - A. Suspended solids
  - B. Settleable solids
  - C. Jar test
  - D. Ammonia

*Questions 1 & 2 are from the WEF/ABC Wastewater Operators Guide Preparing for the Certification Examination.*

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

# NRWA Fleet Program

The National Rural Water Association has created partnerships with the Ford Motor Company and the Chrysler Group to offer special fleet discounts to State Rural Water Associations and their utility system members. This partnership combines the buying power of 31,000 individual utilities to provide reduced fleet pricing on utility vehicles.

The Rural Water Fleet Program is a valuable member benefit for water and wastewater utilities. State Rural Water Associations determine eligibility for their members, and provide a fleet code that allows access to substantial vehicle discounts to fill the need for reliable work vehicles.

Contact your State Rural Water Association to access the Rural Water Fleet Program. Vehicles may be purchased at your local dealer or

through the national fleet auto group at [www.nrwafleet.com](http://www.nrwafleet.com). Incentive discount pricing is available on fuel efficient cars, vans, SUVs and trucks. Systems can save up to \$6,750 off factory invoice per vehicle.

Happy shopping!



## Program Details

- Entities must be current members of State Rural Water Associations to be eligible.
- There is no limit to the number of vehicles that can be purchased under the program.
- Incentive pricing is deducted off the factory invoice.
- Fleet vehicles must be in service for a minimum of 12 months or 20,000 miles.
- Vehicles must be registered and operated in the United States.
- Call OAWU today to get your Fleet Identification Number (FIN).



**Solutions for:**  
 Industrial Waste Streams  
 Manufacturing  
 Food & Beverage  
 Municipal Wastewater  
 Collection Systems  
 Pre-Treatment Programs  
 Mining Waste Streams  
 Refinery Waste Streams  
 Storm Water Catch Basins



BioLynceus welcomes to our Environmental Sales Team, Andy Tomaszewski. Andy is the new Territory Manager for WA and OR.

970-586-3391  
[sales@biolynceus.com](mailto:sales@biolynceus.com)

888-823-7404  
[www.biolynceus.com](http://www.biolynceus.com)

**Bio Lynceus**  
 Environmental Solutions for Waste Water  
 Providing Solutions Since 1994

Utility Design

Structural Engineering

Road Design

Planning

Survey

Stormwater Design

NPDES Compliance

Stream Restoration

Pump Stations

LID Designs

Bridge Construction

Retaining Wall Design

Water Treatment Facilities

Water Main Replacements

Trenchless Pipe Replacements

Kirkland    Wenatchee    Lake Oswego

425.827.2014    509.662.1762    503.597.3222

[paceengrs.com](http://paceengrs.com)



# USDA Rural Development Lowers Rates

Washington D.C. (March 30, 2016) – The U.S. Department of Agriculture has announced new, low rates for their Rural Utility Services loan programs.

The following rates will be effective on April 1:

- Market: 2.875%
- Intermediate: 2.25%
- Poverty: 1.75%

“These new low interest rates for the USDA Water and Waste Disposal Program are an opportunity for rural communities to upgrade, expand, or replace their infrastructure affordably and bring cleaner, more reliable service to rural residents,” said RUS Administrator Brandon McBride. “Funding is available and USDA is ready to work with rural water leaders now while this low rate window is open.”

USDA’s Rural Utilities Service administers programs that provide infrastructure and infrastructure improvements to rural communities.

“USDA plays a critical role in helping to expand economic opportunities and improve the quality of life for rural Americans,” said Sam Wade, CEO of the National Rural Water Association.

“These rates are incredibly low, and systems would be wise to take advantage of this opportunity to make needed improvements.”

Project loans can have up to 40-year payback period, based on the useful life of the facilities financed. The interest rate is based on the need for the project and the median household income of the area to be served. Applications are accepted year round at local offices of USDA Rural Development, or online using RDApply: <https://rdapply.usda.gov>. 🌱

## CONSUMER CONFIDENCE REPORTS

Don’t forget your CCR! Consumer Confidence Reports (CCRs) must be delivered to customers by July 1st. By rule, a copy of the CCR must also be submitted to Oregon Drinking Water Services (DWS) by July 1st. **Tired of mailing out your CCR?**

**OAWU can host your CCR on our website!**

**IF YOU NEED HELP DEVELOPING A CCR, CALL OAWU:  
(503) 837-1212**



## APPLY TODAY!

“You provided the help that we needed when we needed it and in a timely manner.”

Thanks for making it possible and so convenient to obtain a loan in our time of need...”

*Director - Rural Water PWS*

## REVOLVING

# Loan

## FUND



National Rural Water Association  
under a grant from



UNDER  
CONSTRUCTION

## Put these funds to work for YOU!

for more information contact [david@nrwa.org](mailto:david@nrwa.org)  
or go to: **[www.nrwa.org](http://www.nrwa.org)**



**TRIPAC**

Bill Foster  
President

951.280.4488 x112  
951.272.4445 Fax  
billf@tripaconline.com

475 Klug Circle  
Corona, CA 92880

[www.TRIPACONLINE.com](http://www.TRIPACONLINE.com)

Civil • Electrical • Control Systems • Environmental  
Engineering & Consultation  
Certified Water Rights Examiner  
Water & Waste Water System Design & Consultation  
Pump System Analysis & Consultation

### 4B ENGINEERING & CONSULTING

Edward Butts, PE, BCEE, CWRE  
Principal/Chief Engineer  
503-589-1115  
503-881-7100 (cell)  
epbpe@4bengineering.com

3700 River Rd. N  
Suite 2  
Keizer, OR 97303  
503-589-1118 (fax)  
[www.4bengineering.com](http://www.4bengineering.com)

# Need to Review Water or Sewer Rates? OAWU Can Help!

*Take advantage of your Association's services!*

OAWU has built a solid reputation for providing water and wastewater systems with factual, user-friendly, and defensible Rate Studies. Our rate studies, once implemented, have allowed many systems to obtain Capitol Improvement funding from various private and government lending agencies. An OAWU rate study can also provide a plan for systems to gain the capitol to "pay as you go" by outlining a strategy to maximize and streamline revenue and thereby allow water/wastewater system administrators to forecast projects that may be funded in-house. OAWU will provide you a professionally compiled rate study and supporting documentation that will allow you and your council or board to adopt new rates necessary to meet your system needs. ♦

**For bids or estimates, call OAWU: 503-837-1212.**



**EQUIPMENT & ACCESSORIES FOR PUBLIC WORKS**

SEWER CLEANING  
HYDRO-EXCAVATING  
PIPELINE INSPECTION  
LINE LOCATING  
LEAK DETECTION  
VALVE OPERATING  
ROOT CONTROL  
GREASE / ODOR CONTROL  
STREET SWEEPING

**SCHEDULE A PILOT PROGRAM TODAY!**  
**(800) 992-3656**

**NOW RENTING NOZZLES!**  
*Rent the tool you need for specialty jobs*



**Product Spotlight:**  
**HELIX**  
LABORATORIES, INC

Municipalities rely on Helix Laboratories for non-hazardous chemical and microbial solutions to combat F.O.G. (fats, oils and grease) and harmful sulfides.

**A prescription for healthy sewers**

Optimizing sewer function to benefit communities, the environment and waste water infrastructure.



**VACTOR** NO DIG

**EXCLUSIVE SALES PARTNER**

**CUES**



**THREE FULL-SERVICE LOCATIONS**  
Oregon • Washington • California

**800-992-3656**

**CHECK OUT OUR ONLINE STORE**  
[shop.owenequipment.com](http://shop.owenequipment.com)

**800-992-3656**

**THREE FULL-SERVICE LOCATIONS**  
Oregon • Washington • California



# 2016 TRAINING & EVENTS SCHEDULE

Date	Class Title	Location	CEU Information	ESAC#, Fee/Free
June 14	Math for Operators	Winchester Bay San.	0.4 Water/Wastewater/OS	2885 Fee
June 14	Source Water Protection Planning	Winchester Bay San.	0.3 Water	3152 Fee
July 12	Mini Expo	Independence	0.4 Water/Wastewater	3232 FREE
July 13	Pumps and Pumping	Tillamook	0.4 Water/Wastewater/OS	2862 Fee
July 13	Math for Operators	Tillamook	0.3 Water/Wastewater/OS	3153 Fee
July 19	Pumps and Pumping	Pendleton	0.4 Water/Wastewater/OS	2862 Fee
July 19	Math for Operators	Pendleton	0.3 Water/Wastewater/OS	3153 Fee
August 10	Developing Your Operations & Maintenance Manual	Eagle Point	0.6 Water/Wastewater	2780 Fee
August 17-18	Water Treatment Water Distribution Certification Review	Bend	1.4 Water/0.7 Wastewater	2787 Fee
August 22	Effective Utility Management	Seaside	0.6 Water/Wastewater	3235 FREE
August 22-25	22nd Annual Summer Classic	Seaside	1.7 Water/1.8 Wastewater	3235 Fee
Aug 31-Sep 1	Wastewater Treatment/Collections Certification	Salem	1.4 Wastewater/0.6 Water/0.4 OS	2882 Fee
September 20	Water Meters and Service Lines	Independence	0.4 Water	3138 Fee
October 5	SDWA Update	Salem	0.4 Water	2887 FREE
October 5	Confined Space	Salem	0.3 Water/Wastewater	3151 Fee
October 19	Control Valves	Newport	0.7 Water	2863 FREE
November 7	Effective Utility Management	Hillsboro	0.6 Water/Wastewater	3235 FREE
November 7-10	2016 Fall Operators Conference	Hillsboro	2.0 Water or Wastewater	TBA Fee
November 29	Water & Wastewater Field Operations & Safety	Salem	0.6 Water/Wastewater	2944 Fee
December 5	Effective Utility Management	Hood River	0.6 Water/Wastewater	3235 FREE
December 5-8	18 <sup>th</sup> Annual End of Year Operators Conference	Hood River	2.0 Water or Wastewater	TBA 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 is not more than one classification lower than the level of certification they are seeking. 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. If you move on to a Class 3 plant, then you must have ½ 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>

## 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).

# System O&M Manuals Required

## Have you completed your state-required Operations & Maintenance Manual?

Oregon Association of Water Utilities has prepared a full day class to assist operators in outlining an operations and maintenance manual per the Oregon Administrative Rule 333-061-0065 which requires each water system to develop an operations and maintenance manual. This class will assist the water and wastewater system operator in outlining the specific points in developing the draft of the O&M manual. Step by step, each attendee will create their draft as it relates to their utility system during class. The e-file may then be completed back at the system office.

Class cost is \$155, or if you are unable to attend a class you may purchase a thumb drive with e-files for \$155. To sign up for the class, or to have a thumb drive mailed to you, contact OAWU for more information. ♦



# 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](http://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](http://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.*



# MEMBERSHIP APPLICATION

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

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

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

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

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

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

Operator: \_\_\_\_\_

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

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

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

## Type of System:

☐ Water ☐ Wastewater ☐ Both

## Membership Category Amount of Dues

<input type="checkbox"/> Regular Member	\$ _____ See schedule below
<input type="checkbox"/> Associate Member	\$400.00
<input type="checkbox"/> Individual Member	\$75.00

## Regular Member Dues Schedule

1 to 100	\$75 + 31 cents per hookup
101 to 500	\$80 + 31 cents per hookup
501 to 1,000	\$90 + 31 cents per hookup
1,000 and up	\$100 + 31 cents per hookup
Maximum dues is	\$940.00

**Mail payment to: OAWU**  
**935 N. Main Street**  
**Independence, OR 97351**

*If paying by credit card, please call  
the OAWU office at 503-837-1212 for  
processing and receipt.*

## Membership Types

### Regular Member

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

*Annual Dues - See Dues Schedule*

### Associate Member

An Associate Member shall be any organization individual or corporation, supplying services or equipment to water and wastewater utilities. An Associate Member shall have one vote. For Associate Member Benefits, please contact OAWU.

*Annual Dues \$400.00 per year*

### Individual Member

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

*Annual Dues \$75.00 per year*

## Benefits of Membership

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



Please return to OAWU:  
935 N. Main St., Independence, OR 97351  
or Fax: 503-837-1213 or email: [office@oawu.net](mailto:office@oawu.net)

MB16

# MEMBERS

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

Century Meadows Sanitary System,  
 Inc  
 Century Meadows Water System, Inc.  
 Charles Tracts Water Company  
 Chehalem Mt. Sun Ridge Association  
 Chenoweth Water PUD  
 Chiloquin, City of  
 Christmas Valley Domestic Water  
 Cimmarron City Water Co., Inc.  
 Circle C Improvement District  
 Clarks Branch Water Association  
 Clatskanie, City of  
 Clayton Creek Water Association  
 Cline Butte Utility Company  
 Cline Falls Mobile Home Park  
 Cloverdale Sanitary District  
 Cloverdale Water District  
 Coburg, City of  
 Colton Water District  
 Columbia City, City of  
 Columbia Hills HOA  
 Columbia River PUD  
 Conagra Foods  
 Condon, City of  
 Confederated Tribes of Siletz Indians  
 Coquille, City of  
 Corbett Water District  
 Cornelius, 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 Water Supply &  
 Improvement District  
 Creswell, City of  
 Crooked River Ranch Water  
 Company  
 Crystal Springs Water District  
 Culver, City of  
 Dallas, City of  
 Dayton, City of  
 Dayville, City of  
 Deception Creek Mobile Park  
 Deer Creek Estates Water Assn.  
 Deerhorn Community Water  
 Association  
 Depoe Bay, City of  
 Deschutes Valley Water District  
 Detroit, City of  
 Dexter Oaks Mobile Home Park  
 Dexter Sanitary Service  
 Diamond Peaks Tract 1355  
 Diamond Summit Association  
 Dietz Airpark Water System  
 Donald, City of  
 Drain, City of  
 Drifters Mobile Home Park  
 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  
 Elkton, City of  
 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 View Water Company  
 Fischer's Place Mobile Home Park  
 Fishhawk Lake Recreation Club, Inc.  
 Florence, City of  
 Forest Park MHP  
 Fossil, City of  
 Garden Valley Water Assn  
 Garibaldi, City of  
 Gaston, City of  
 Gates, City of  
 Gearhart, City of  
 Gervais, City of  
 Gilchrist Water Co., LLC  
 Gladstone, 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  
 Grand View Mobile Home Park  
 Granite, City of  
 Grants Pass, City of  
 Green Oaks Mobile Ranch  
 Greenhoot Properties  
 Gresham, City of  
 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 District  
 Helix, City of  
 Heppner, 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 Company  
 Hubbard, City of

Hunnell Hills Water System  
 Huntington, City of  
 HWY 58 Trailer Park  
 Ice Fountain Water District  
 Idanha, City of  
 Idleway Improvement District, Inc.  
 Imbler, City of  
 Independence, City of  
 Indian Meadow Water Company  
 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  
 Junction City, City of  
 Juniper Mobile Home Park  
 Keizer, City of  
 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, Inc.  
 Knappa Water Association  
 Knoll Terrace MHC  
 L.A. Water Cooperative  
 La Casa Mia  
 La Pine, City of  
 Lady Creek Water System  
 Lafayette, City of  
 Laidlaw Water District  
 Lake Grove Water District  
 Lakeshore Mobile Estates  
 Lakeside Water District  
 Lakeside, City of  
 Lakeview, Town of  
 Lakewood Utilities, LTD  
 Lamontai Improvement District  
 Lamplighter Water Association  
 Lane County Parks  
 Langlois Water District  
 Lark Meadows Water Association  
 Laurelwood Water User's Co-op  
 Lawrence Subdivision Water  
 Association, Inc  
 Lebanon, City of  
 Lexington, Town of  
 Lincoln City, City of  
 Little Beavers Preschool  
 Long Creek, City of  
 Lostine, City of  
 Lowell, City of  
 Luckiamute Domestic Water Co-op  
 Lyons-Mehama Water District  
 Madras, City of



# MEMBERS

Madrone Hill MHP  
 Malin, City of  
 Manzanita, City of  
 Mapleton Water District  
 Maupin, City of  
 McKay Acres Improvement District  
 McKenzie Palisades Water  
 McLain Village 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  
 Moran Water System Association  
 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  
 Orchard Point Mobile Homes  
 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.  
 Parrett Mountain View Estates  
 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  
 Riviera Mobile 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  
 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.  
 Zig Zag Water Cooperative, Inc.

## WELCOME, NEW MEMBERS!

Josh Kelso  
Darrell Madsen  
Jamie Hildebrandt  
Brandon Phillips  
Daniel Morgan

City of Beaverton  
Springwater Estates

Philip Endicott  
Warampa Thiramoke  
Paul Bock  
James Beauchemin  
Randall Eschler

Bandon Dunes Resort  
City of Helix

Travis Gibson  
James Hatcher  
Alan Johannsson  
Tyson Keene  
David Neal

BMS Technologies  
Treatment Equipment Company  
HASA Inc.  
JBI Water & Wastewater  
The Chlorine Div. of the American Chemistry Council  
True North Environmental

## INDIVIDUAL MEMBERS

Alexander, Sandra  
Anderson, Frank  
Anson, James  
Anthony, Joe  
Ashenberger, Jacob  
Ayles, Terri  
Baker, Scott  
Barnett, Brian  
Beauchemin, James  
Bell, Ron  
Biamont, Tony  
Bicknell, Roy  
Blake, Mike  
Bock, Paul  
Bogart, Austin  
Bradshaw, Dave  
Brenneman, Scott  
Brown, Jeff  
Buckley, John  
Bull, Kendra  
Burton, Howard  
Buskirk, Jeff  
Carlton, Larry  
Cass, Bradley  
Cervantes, Fernanado  
Clement, Tony  
Close, Greg  
Collentine, Mary Ellen  
Crook, Tyler  
Daniel, Morgan  
Davis, Guy P.

Desroche, Ron  
Dillard, Bob  
Dolbow, Elizabeth  
Durfee, Kenneth C.  
Elder, Dave  
Endicott, Philip  
Eschler, Randall  
Estrada, David  
Evans, Peter  
Farris, Randy  
Foster, Rob  
Fox, Donna J.  
Free, Derek  
Furr, Tracy  
Gammell, Pat  
Gastineau, John  
Geiman, Dave  
Gibson, Travis  
Gill, Robert J.  
Ginter, Brian  
Goodpasture, Joe  
Grell, Jack  
Griffin, Beverly "Bev"  
Halverson, Bruce  
Hamilton, Howard  
Handler, John  
Hannen, Scot  
Hawkins, David  
Hecox, Thomas  
Heide, Tracy  
Hengler, Kyle

Hensley, Darryl  
Hildebrandt, Jamie  
Hodge, Patrick R.  
Hubbard, Tom  
Hume, John  
Humphrey, Mark  
Hunt, Jeremiah  
Jauron, Scott  
Jay, Jerry  
Johannsson, Alan  
Johanson, Grady  
Johansson, Leon  
Jones, Randall  
Kash, Stella  
Katreana, Scott  
Keenan, Pete  
Keene, Tyson  
Kelso, Josh  
King, Andy  
Kirk, Jeremiah  
Klinger, Martin  
Kneaper, Jason  
Kuhnke, Joel  
Kunders, Aaron  
Laetzsch, Dawna  
Lake, Ron  
Lapierre, Josh  
Larman, Dan  
LaRoque, Scott  
Lawson, Brian  
Leeper, Clifford

Leon, Gary  
Lewis, Mark  
Lund, Darrell  
Madsen, Darrell  
Maine, Mike  
Malley, Susan  
Marshall, John  
McClenathan, Mike  
McFadden, Tim  
McKevitt, John  
McKinney, Donald  
McManus, Peter  
Mead, Matt  
Mecham, Jade  
Meigs, Gilbert  
Mergel, Kyle  
Merrell, Thomas  
Merritt, Steve  
Moniz, Garrett  
Mooney, Ronald  
Morgan, Daniel  
Morris, Brady S.  
Myers, Tim  
Neal, David  
Norris, Rick  
Odell, Mark  
Ohman, Laura  
O'Reilly, Mike  
Parent, Kenny  
Parks, Donita  
Patch, David

Patterson, Elaine  
Pendell, Keith  
Perry, Richard  
Phillips, Brandon  
Pinson, James  
Porter, James  
Powers, Ron D.  
Rader, Jonathan  
Rettke, Tim  
Risley, Michael  
Schmidt, Lonny  
Schmittle, William L.  
Schnell, Kent T.  
Schroeder, Michael  
Scowden, Mark  
Seelye, Shawn  
Seleshanko, Alexei  
Sellers, Ricky  
Sheppard, Neal F.  
Sherlock, Christopher  
Simenson, Donald J.  
Simmons, Edward  
Simpson, Steve  
Smith, Craig  
Smith, Larry  
Smith, Ryan  
Solis, Kimberley  
Sollee, James  
Stark, Chris  
Steele, Mark  
Steidler, Matthew B.

Stevens, Brian  
Stone, Brian  
Strassner, Bob  
Tabrum, Walter  
Thayer, Bradley  
Thiramoke, Warampa  
Thompson, Jake  
Thompson, Kamen  
Thompson, Matt  
Tinkess, Andy  
Trusty, Cole  
Tupper, Sean  
Turner, Keith  
Turner, Susan  
Tyerman, Paul  
Uhrich, William  
Violette, Jeff  
Wabschall, Steve  
Wales, Matthew  
Wanner, Ron  
Warrick, Logan  
Weber, Thomas  
Wheatley, James  
Whitlock, George  
Wiley, Thomas  
Williams, Benjamin  
Winters, Robert  
Wolford, Paul  
Woodward, Steve  
Woody, Max

## ASSOCIATE MEMBERS

4B Engineering & Consulting  
Abbey Systems, Inc.  
Advanced Control Systems  
American AVK Company  
American Flow Control  
American Leak Detection  
Anderson Perry & Associates  
Backflow Management, Inc.  
(BMI)  
Badger Meter Inc.  
Bainbridge Associates Inc.  
Baker Water Systems  
Bancorp Insurance  
Bend Winsupply  
BergerABAM  
BioLynceus, LLC  
BMS Technologies  
Branom Instruments Co.  
Cascade Columbia Distribution  
Co.  
Ch2M Hill - Lebanon  
Chlorinators Incorporated

CIMCO Sales and Marketing  
Clean Water Services  
CoBank  
Consolidated Supply Co.  
Corix Water Products  
Correct Equipment, Inc.  
CUES  
Davis Sales  
Ditch Witch Northwest  
DN Tanks  
Edge Analytical Laboratories  
EJ  
Engineering America  
Enviro-Clean Equipment, Inc.  
Ferguson Enterprises  
FloHawks  
Frank J. Martin Company  
Frost Engineering Service Co.  
- NW  
Furrow Pump, Inc.  
GC Systems, Inc.  
General Pacific, Inc.

Georgia Pacific  
HACH Company  
HASA Inc.  
HD Fowler Company, Inc.  
HD Supply Waterworks  
Hydra-Stop  
Ipex USA  
Itron, Inc.  
JBI Water & Wastewater  
Jordan Ramis PC  
Kennedy/Jenks Consultants  
Kennedy/ M&H Valve  
Lakeside Industries/EZ Street  
League of Oregon Cities  
LiquiVision Technology, Inc.  
Master Meter, Inc.  
Mueller Company  
MULTI FITTINGS  
Nelson Environmental  
Neptune Technology Group  
Olson Engineering

Oregon Business Development  
Dept.  
Oregon Meter Repair  
Oregon Public Utility  
Commission  
Owen Equipment Company  
OXARC Inc.  
PACE Engineers, Inc.  
Pittsburg Tank & Tower Co.  
PIXIS Laboratories, LLC  
Pollardwater.com  
Public Works Supply  
PumpTech Inc  
RH2 Engineering Inc.  
Romac Industries, Inc.  
Schneider Water Services  
Schoen's Motors  
Schroeder Law Offices, PC  
Security Lines US  
Sensus USA  
Shearer & Associates

Special Districts Assn of  
Oregon  
Taylor Made Pump Stations  
The Automation Group  
The Chlorine Div. of the  
American Chemistry Council  
The Ford Meter Box Co., Inc.  
The Sherwin-Williams Company  
Thompson Pipe Group -  
Flowtite  
TMG Services  
Treatment Equipment  
Company  
Tripac  
True North Environmental  
Umpqua Insurance Agency  
Umpqua Research Co.  
USABluebook  
Utility Service Company, Inc.  
Waterlab Corp  
Whitney Equipment Company  
Wonderware PacWest  
Xylem, Flygt Products



# GLASS-FUSED-TO-STEEL BOLTED MODULAR TANKS

## Operate at a higher level.

Specifying Glass-Fused-to-Steel tanks means specifying the lowest total life cycle cost to tank owners. No other tank company can match the longevity and quality of our low maintenance tanks that can be constructed in 1/3 of the time it takes to build concrete and welded tanks, and we do it with our own expert crews.

- ▶ 36 years of experience
- ▶ 1,200 tanks and counting

**NO PAINTING ▶ NO FADING ▶ NO CHALKING ▶ NO DEGRADING ▶ NO WORRIES**

*On average, we build a tank every 4-5 days.*



Engineering  
America



**PERMASTORE®**  
TANKS & SILOS

## The Tank Industry's Leaders have Joined Forces!

Engineering America is now partnering with PermaStore, the global market leader in modular tank and silo design, to bring the innovative PERMASTORE® products and services to the U.S. water, wastewater, and industrial markets. This partnership expands Engineering America's regional coverage to 24 states. Expanded coverage provides significant new customer benefits, including an enhanced ability to serve customers with multiple locations in the United States. It also allows us to offer the highest value products from the global leader to the U.S. market, including to our existing base of over 1,000 customers. Visit Engineering America and PermaStore at local and national tradeshow around the country!

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. 106



1991-2016

# 25 Years Serving Water & Wastewater PROFESSIONALS



**Your #1 Source for  
Operations & Maintenance Supplies**

Over 64,000 Products • Personal Customer Service  
Expert Technical Support • Nationwide Distribution Network

Request your **FREE** catalog today!

 **800-548-1234**  **[www.usabluebook.com](http://www.usabluebook.com)**

## **USA BlueBook®**

A PROUD **HD SUPPLY** COMPANY  
FACILITIES MAINTENANCE