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Winter 2014
Vol. 36, No. 1

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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:

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Multnomah Falls
photo by Heath Cokeley

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Re-igniting the Spark

by Jason Green, Executive Director

A short introduction to an article written just over ten years ago. There are not many times that we write something encouraging and challenging and ten years later, pick it up to read. That is what occurred with this article when Louisiana Rural Water requested a reprint. Much has occurred in ten years; some wonderful events, some extremely challenging – this is life. For the most part, our staff remain but with a few additions. My wife and I celebrated our 27th anniversary and my little girls seem much, much older now. Did I make the most of the opportunities given? Did I take time to reflect and learn and will I in the future? What will I do in the next ten years and again, will I reflect back and say to myself, “There is no way. Absolutely *no way* ten years has passed so quickly!”

Wishing you and yours a wonderful 2014!

There is something about fall that is more than a seasonal change. Maybe it is all the fond memories mixed with anticipation of what is to come. The enjoyment of fishing and hunting or seeing a child with arms bared and shivering while white puffs of vapor rise from words spoken as the bus nears. Being caught off guard at the rapid arrival of shorter days, the brisk mornings and the turning leaves. These always seem to say, “Get ready, a change is coming.” It is my favorite time of year. It is the time of year that provokes reflection.

For several weeks, the thought of another summer gone by has been my wonderment. My three girls are getting older (quickly!), that anniversary of seventeen years to the bride of my youth will soon be here – where did the time go and did I use it wisely? Did I miss any memories being made due to too much work? Have I been selfish, self-centered, lazy, arrogant, ambitious, motivated, responsible or the other fifty plus descriptive words we often don’t spend time thinking about in relation to our lives. When my children leave home, what will be their memories of their father? When I retire or an employee leaves my watch, will I have left a positive and lasting impact upon them? Did I make time?

There is a story I once heard that reveals the tendency in many of us to place such consuming importance on a particular matter, that we miss smelling the roses, or worse, miss the moment of opportunity we may have to make a positive impact on another’s life.

A young businessman and father had brought office work home and began straining at his yoke. Some time later and very much immersed in his work, his three-year-old daughter happily bounces up to him and patting him on the knee seeks an answer from her father. The father briskly pushes her away saying that he is in the middle of some very important matters. Later with determination in her eyes and wishing to obtain a moment of attention and affection from her beloved father, she tries again to seek his favor. Once more, the father is not to be interrupted nor detained by such small matters, as his work will not wait. Finally, with a change in what the father has been working on and seeing him pick up his day planner, the

little girl moves forward one last time. As she stands by his side and catches a brief glance from her father she asks, “Am I in your book Daddy?” With that simple and innocent question, the reality of his actions seemed to materialize before him in vivid color. What would you do - in a moment? And the spark, was it snuffed out or fueled? Was it the father’s spark that needed attention or the child’s needing protection?

Franklin Covey calls it sharpening the saw; I like to think of it as keeping the spark. A balanced life requires one’s attention, the setting of priorities and much hard work with our busy schedules. Is a moment of reprieve or a brief furlough needed? Are we able to make time to regroup and set priorities and goals? Where is that same spark that ignited the flame for the love of your life or the job you once valued? Has it been five, ten, twenty or more years? Has the enthusiasm dulled in that time? How many opportunities can we find to offer a hand, go the extra mile, show someone you care or say, “I love you” with actions rather than just words.

Where or how might I recharge that enthusiasm? How might I be more aware of the opportunities? How might I inspire or encourage another? Try something different. Maybe finish an old “to do” item that has been hanging around and keeping you from sleep at night. Begin an exercise routine or running program. Try a challenging or “on the edge” type sport. Take a vacation to a place you have never been or go to Sunday school. Take a walk with a small child and enter their awe and wonder of life. Talk to your spouse the way you used to (no, I mean talk). Read a new book, take a college course or volunteer where help is needed and payment comes by way of knowing you helped someone.

Reflection is great to see where you came from, build memories and learn lessons to be placed away for future use. Recharging often takes change of pace, whether that is ten minutes or a week. How do you recharge or keep the spark? It is an admirable person who has the wisdom of a seventy-year-old but with an active and quick mind of a twenty-year-old. To all of you who enjoy and thrill in the challenge of life, best wishes! 💧





Community Spirit in Times

by Jack Hills, Source Water Specialist

My roots to Colorado and Weld County draw my attention to the recent flooding disaster that occurred along the Front Range of the Colorado Rockies. Reviewing the devastation that occurred in many towns and communities reveals the loss of homes, property, municipal infrastructure, livestock, pets and human life. As in all tragedies, we find stories of caring, concern and compassion from the midst of those most ill affected by the events.

It all started with a slow moving weather system collecting a massive amount of moist air from the Gulf of Mexico which moved into Colorado and came up against the Rocky Mountains. As we know from the hydrologic cycle, increased elevation and cooling releases the moisture as precipitation. This was not a typical rain-storm. It has been reported that this storm released, in the neighborhood of, 14 inches of rainfall in 48 hours in the Jamestown area. Many communities were affected all along the Front Range from Colorado Springs north to Estes Park. Southeast of Jamestown is the city of Boulder at the foot of the mountains. Continuing east you come to Weld County one of state's largest agricultural areas. It is also the location of thousands of new oil and gas wells, employing the latest technology of horizontal drilling and "fracking" to release the energy hydrocarbons thousands of feet below the surface. It is amazing to view the updated Google Earth maps and view pipelines, storage tanks, holding ponds, fracking pads and related equipment staging all across the county. Even farther east are the national grasslands where my ancestors homesteaded just over a hundred years ago.

Jamestown was hit during the night by a mud and debris slide coming down the mountain and raging waters in the creek from the 100 year flood. As a side note I found the USGS has decided to change the terminology from "100 year" flood to

"1 percent chance" flood; this to avoid the misunderstanding that folks think a 100 year flood only happens once every hundred years. The flood waters took to new routes from the original streambed, cutting new channels that took homes, property, trees, vehicles, everything in their way. The only two access roads, one from the north and the other from the south, were washed out leaving the community stranded, isolated from vehicular traffic in or out of the town. The drinking water filtration plant was put out of service as was the wastewater plant. Not all of the power was knocked out. Those who no longer could stay in town joined the air evacuation, only small helicopters that could land in the tight confines of the community could be used. Sadly, one well respected gentleman of the town was killed in his home when the debris flow crashed into his house.

Of course the flooding didn't stop here as it continued down the mountain side and into the foothill communities, like Boulder, on to Longmont and easterly into Weld County, the agriculture lands, well fields, and its entire infrastructure. This had the makings of a major environmental disaster if the oil pipelines, storage tanks, holding ponds, and operating oil wells were damaged and compromised by the flooding.

Searching the internet for Jamestown, CO flooding, you will find the stories that I have seen. Add to the search, USGS, Boulder Co., Weld Co. Gas and Oil Commission, Churches near Jamestown, and you will begin to see the broader perspective of how we, not only, deal with the immediate crises, but pull together with our neighbors, neighboring communities, and across the country to help those in need.

Noble Energy, a major player in the oil and gas production and facilities in Weld County set up their own incident emergency response command center. Early

Oregon Association of Water Utilities

of Disaster

on they began shutting down the operating oil wells and securing the massive infrastructure facilities that would be in the path of the oncoming floodwaters. As a result of this preparation, a major catastrophe was avoided. Yes, you will find where oil pipe lines were washed out, some steel storage tanks were up turned, and facilities damaged. However, the documented release of spilled hydrocarbons did not appear in subsequent state water quality testing to be significant. Resulting positive tests for E. Coli in the water was a greater concern, having come from flooded wastewater plants and agriculture lands.

Back to Jamestown, my fellow Source Water Specialist, Coleen, with Colorado Rural Water lives there and serves on the city volunteer emergency response team. You will find her among the many videos of people sharing their experiences during the disaster, how they helped one another get through these difficult times, dealing with the losses, but maintaining resolve to re-build and return to Jamestown. After limited access was restored from the north, bottled water, building supplies, and portable toilets were brought in. The local manufacture of portable toilets was unable to keep up with the demand. One story related how companies like Noble Energy sent workers to the manufacturer of the portable toilets to increase production



for the growing demand. They also sent their subcontractors with equipment to help with the massive cleanup and the subcontractors themselves donated part of their expenses to the cause. Another story related how the Southern Baptists set up a coordination center in town to match up the volunteer workers coming in to help with the local residents to clean up their properties.


The town mayor met with a state senator and talked with the Vice President as she sought assistance the community would need to restore water, sewer, and transportation. The EPA provided removal of the cleaned out debris.

A FEMA inspector had the following to say: "I've been to many disasters, but I can say I've never been to a stronger community, as I said before, the

determination, strength, and gratitude was inspirational. You Jimtowners are the model of how a community should come together after such an event. If I could bottle the spirit of Jamestown I would call it 'Mountain Strong'." ~Scott W, FEMA Inspector

It is wonderful to be reminded that when faced with calamity, the spirit of compassion and concern for our neighbors is always there. I'll leave you with a website, that of Jamestown, Colorado if you want to be further blessed by the stories showing the compassion we have for one another during an immediate crisis and our resilience to re-build and not be defeated. At www.jamestownco.org, just go to the [rebuildjamestownco](http://rebuildjamestownco.org) link and click on the "news."

Thanks for reading. 💧

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Which Decision Will You

by David Branham, Wastewater Technician

It has been said that during your lifetime you will change careers five times. It seems that the days of going to work for a company and finishing up your career at that same company are long gone. Let me give you an example: As a young man fresh out of high school, just newly married, and living right in the middle of the Great Pacific Northwest timber country, it was quite simple to find a good paying job in the timber/lumber industry. Sawmills were abundant and a strong back, and little else, was all that was required. Over the years I worked at several different lumber companies and the mantra I heard was always the same. "What are you doing here boy? You should go to work for Weyerhaeuser." Now at that time Weyerhaeuser Timber Company owned and operated the largest softwood lumber mill in the world and it only stood to reason that I should follow the advice of my peers and go to work for them. After all, Weyerhaeuser paid the best wages, had the best medical insurance, and had more fringe benefits than any other employer in the industry.

Skipping ahead twenty years or so: I never did go to work for Weyerhaeuser and it was just as well, for they have long ago ceased their operations and closed their doors. By this time it was the mid 1990s and the raw supply of timber was very much in short supply and most lumber companies no longer existed.

I was working for a smaller lumber company that had been in business at the same location for many years and even this company was stressed from the lack of raw materials. Then, one day (not completely unsuspected), came the dreaded ninety day notice. We are closing our doors and you will no longer have a job. Twenty years is a long time to work for a company and I had resigned myself

to retiring from that company. Obviously, this was not going to play out as I was not even close to retirement age.

The lumber industry had given me and my family a good life even though I liked to call it the rollercoaster ride. At times we would work fifty hours a week and other times we barely stayed off the unemployment dole. The lumber industry is and was very much dependent on how good the economy performs. More housing starts = lots of work, slow or no housing = very little work.

After the layoff, many of my co-workers found employment working for several other wood products companies that were still left in the area. However, I made the decision that now was the time and opportunity to make a drastic change, to find a career that was more stable and would not play out in a few years. After much study, research, and discussion with my spouse, I made the decision to pursue a career in the water/wastewater industry. One thing I knew for sure, people will always need good clean water and, shall we say, a good way to dispose of human waste.

With the decision being made I loaded up my family, put my house up for sale, and off we went to school. I spent the next two years studying water/wastewater technology at Linn-Benton Community College. When the time drew near to finishing up the program I was sure that I had a good chance of landing a job in this field.

I was not idle in pursuing gainful employment during my last semester of school and within a few days of graduation I was offered two jobs: the higher paying job was working for a pulp and paper mill and the other was a wastewater position working for a small town. Well, I had already done the wood products and

Make?

pretty much had an idea what that was like, so I accepted the position of wastewater operator and never looked back. Oh, by the way, that paper company is no longer in business.

My only regret being I didn't get into this field of work many years earlier. For those of you that know me you have more than likely heard me say, "this is a great field of work to be in, but where are the younger people?" I have stated it and written about it many times and not much has changed over the years since I started in this field. Most of the workers in this field are, shall we say, long in tooth.

With that being said, right now, right here in River City, many jobs in the field are opening up. A lot of us "older workers" are now, or soon will be retiring. The opportunities are more abundant than ever and, I may add, yours for the taking. If you are willing to work hard, learn, and apply yourself, the opportunities are many and varied. Check it out for yourself and see what opportunities may lay before you. 💧



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I Don't Have Time to be

by Mike Collier, Training Specialist/Operations

Have you ever been stressed out? Has it ever felt so overwhelming that late at night you are unable to fall asleep and continue to think about different issues that are going on? Stress can become so overwhelming at times that it incapacitates us – we freeze and can't go on. We might even begin to feel hopeless.

In this article we will expose stress, starting with what it is, going through possible symptoms, and ending with possible things we can do about it. Let us start off with a working definition of stress. We will say that stress is a force exerted onto one thing by another. So in other words stress can be viewed as a change or perceived change and the brain's reaction to this change, this can be either good or bad. Usually, we think of it as a bad reaction. Anything that causes us to change from a preferred trajectory can be considered stress; it is something that has pushed us onto a new path. An example would be: the new task just given to us by a boss (the force) is now causing anxiousness and pressure (stress) due to time constraints. Stress can be from a long-term source or a short-term source. It can range from getting a child ready for school, on one end of the spectrum, to a divorce or life altering illness, on the other end. It can show up from exposure to violence or a serious accident.

Everyone feels stressed at some point, so remember we are not alone in this. Some people have the right tools to cope with stress and some do not. It is important to be able to know where your limits are and be able to stop before anything becomes overwhelming.

Not all stress is bad; all animals have a stress response, which can be life saving. The adrenaline and other chemicals released during stress prepare the animal for the "flight or fight" response and protect them. The reaction can help to maintain focus and possibly prioritize

work. The danger of stress is if we break-down from it, we don't have the personal ability to handle it, or it becomes chronic. With chronic stress, when the source of stress is constant or the stress response continues after the danger has subsided, we can have negative physical and mental side effects.

Stressors can be differentiated into three main groups:

- Routine stress - related to the pressures of work, family and other daily responsibilities.
- Stress brought about by a sudden negative change - such as losing a job, divorce, or illness.
- Traumatic stress - experienced in an event like a major accident, war, assault, or a life threatening natural disaster.

Stress comes with physical symptoms; this can range from digestive symptoms, to headaches, sleeplessness, depressed mood, anger, irritability, and increased sickness (as people under chronic stress may have a lowered immunity). Over time, continued strain on the body from routine stress (chronic) may lead to serious health problems, such as heart disease, high blood pressure, diabetes, depression, anxiety disorder, and other illnesses.

Here are some of the statistics about the causes of stress:

- 76% cite money and work as the main cause of their stress
- 55% of employees say that job demands have interfered with responsibilities at home in the past three months (American Psychological Association, 2009)
- 54% say that stress has caused them to fight with people close to them
- 51% of employees said they were less productive at work as a result of stress
- \$300 Billion – the annual costs to employers in stress related health care and missed work
- 51% experience fatigue
- More than half of adults report that family responsibilities are a significant source of stress

Stressed Out Right Now!

- 50% are irritable and angry
- 48% report lying awake at night due to stress
- 45% are nervous
- 45% lack energy
- 44% of workers have gained weight in their current job and nearly one third say that work related stress contributed to their weight gain (CareerBuilder Inc., 2010b)
- 44% have a headache
- 35% feel like crying
- 34% have an upset stomach
- 30% have muscle tension

We have seen that during a short term stress inducing event the stress may actually help us deal with the event. However, a chronic feeling of stress does not help any situation. When feeling chronic stress we are wasting time and energy while not progressing toward an unstressed state. There are steps we can take to help alleviate the feeling of chronic stress. If too many items are on our plate take time to write the list of items down so that we are able to work through them in a prioritized order and check them off as they are completed. This helps us keep things in perspective and to not become unnecessarily overwhelmed. If it is a person that is causing the stress, talk with them and if things don't improve, tell a supervisor or remove yourself from having too much contact with them. Sometimes it is important to change our perspective; remember that we do not have the power to control others, we can only control ourselves, how we react, and what we think. We can't control the world – it is important to not try to control everything, some things are out of our control, and this is ok.

What are some other things we can do to manage stress? If we are unable to think of a way to manage stress or are overwhelmed by the stressors in our life, it is ok to get professional help. This is nothing to be ashamed of; sometimes it is important to get a different set of opinions and ideas about how to manage the stress. To do

Top Causes of Stress in the U.S.		
Rank	Cause	Factors
1	Job Pressure	Co-Worker Tension, Bosses, Work Overload
2	Money	Loss of Job, Reduced Retirement, Medical Expenses
3	Health	Health Crisis, Terminal or Chronic Illness
4	Relationships	Divorce, Death of Spouse, Arguments with Friends, Loneliness
5	Poor Nutrition	Inadequate Nutrition, Caffeine, Processed Foods, Refined Sugars
6	Media Overload	Television, Radio, Internet, E-Mail, Social Networking
7	Sleep Deprivation	Inability to release adrenaline and other stress hormones

Stress, by the numbers: (<http://www.statisticbrain.com/stress-statistics/>)

this we may as well go to someone who is trained in such things. Or we may have to try some different prescriptions to help alleviate the feeling of stress. I am not a big proponent of taking unnecessary drugs, but if they are able to help us as one part of an overall stress management scheme, then I say go for it – it is better than the cloud over our head or the heart attack that may be waiting around the corner.

Also, get proper health care for existing or new health problems, as these types of issues tend to add to our feeling of stress and they may be just enough to push us beyond what we can normally cope with. Another important item that can help reduce stress is to exercise. Cardio can help give us some of the chemicals we need to alleviate feelings of stress. Exercise can also give us a boost of energy to complete daily tasks and the ability to fall asleep at night. It also gives us time to be alone with our thoughts for a little while, this can help clear the head and put some items into a priority order.

Sometimes we need to learn how and when to say no. Some of us have a real problem turning down a boss or coworker when they have asked us to do something, but if we don't have the time to complete the task it is much better to inform them about this than to be overworked and complete the task subpar. This can sometimes be from really having too much on

our plate, or for some it may be an excuse or a way to trying and get out of being responsible. Maybe priorities of work need to be moved around so that the necessary time can be devoted to the new task, but we would not know if this is an acceptable option unless we ask.

Sometimes stress comes from being too self centered. We may care too much about how others view us, our looks, our abilities, the money we make, or our work. These types of things cause undue stress in our lives. It is important to do our best and to be ok with that; we will never be able to control what others will think about our work. Another type of self centeredness is to think that the world revolves around us, but this can also add stress to our lives. We have to think outside of ourselves, not put all the pressure on ourselves, and stay humble.

We can add to our stress by making everything dependent upon ourselves. One example is becoming overwhelmed by decision making. If we have two choices and are worried that we may make the wrong one, we may be able to work through it by compiling the facts, talking it over with others to get their opinions, and then make the choice we think is best. We then will have a reason established for the choice we had made. Usually, either of the decisions would have been right – there was no wrong choice; they were just

different choices (there will always be pros and cons for either choice that is made).

Some other ways to help with stress are to concentrate on the positive and on those things that have been completed. This will help to keep things in the right perspective. Also, we should also give credence to a higher power than ourselves. If we think it is all about us, our needs and that everything depends on us, we may be setting ourselves up for failure. This world will move on with or without us, life does not depend on what we do or do not do. If we need help then we should try to get it, we should do our best and then move on, the world has. Talking about the things that are stressing us with friends can help us unload our stress. This does not mean

overload others with all our problems all of the time, but rather to find someone that is safe, someone you trust and spend an hour a week to meet with them and release some of the issues that are going on and giving them the time to do the same. Be thankful for what we have and don't be worried about the things that are not controllable. Schedule regular times to do things that you enjoy and that relax you. Explore stress coping programs.

As we can see many things can stress us out, only a few are mentioned here, but the stress usually is not necessary. If the stress is within our control then we need to move passed the stressful feelings and do something about the stressor, but if the stress is not within our control we need to

move passed the stressful feelings because no matter what we do, or how much effort we put in, the event will not change. If you are feeling overwhelmed by stress I advise you to try some of the items above to try and better manage it – I figure at least it might be worth a try. 💧

Q&A on Stress for Adults: How it affects your health and what you can do about it

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Work to Live

by Heath Cokeley, Circuit Rider

Recently, a friend of mine told me “I work to live, I don’t live to work.” While, I find no problem in the humor in his statement, I do not fully agree with it. I am not saying that every waking second of your life should be work, but merely saying, what is the problem with your work defining who you are. I have defined myself as a Water Operator for many years now and have always taken great pride in that definition. To me the designation of Water Operator means that I am fully committed to the health and safety of my community. That I will work around the clock, if need be, to resolve any issue that may arise and I do this not for a pay check or a pat on the back, though those things are appreciated, I do this because it is the right thing to do and it’s what is demanded of each and every operator in this industry. Those that are unable or unwilling to do this typically do not last in this industry.

I think it is important, no matter what industry your working life is in, to find a sense of purpose in it. I find it funny when you hear the statement “What do you want to grow up and be, a garbage man?” like that would be the worst thing ever. Seeing as the world in which we live could not exist without the profession of “garbage men” why would that be such a bad thing. Yes, it may not be a title to which many kids aspire to, but it is an essential function in today’s world and should never be looked down upon. So, why do we attach such a stigma to a job title?

Many job titles have been changed to try and raise the professional look of the job. For

instance, in our industry water or wastewater workers have been called simply operators for many years. Now there is a big push, nationally, to have this title be System Operations Specialist. This is to promote the professional appearance of our industry and reflect the continued training all Operators need to go through, not just to get there certifications, but maintain them.

Throughout your life you will work with many people; some good employees and some bad, as well as, some good people and some not so good. The defining point will be where you decide to fall on that scale. Do you want to be the person that is asked to complete a task because the boss knows you will get-r-done, or do you want to skate by doing the minimum? That is a question that only you can answer.

With all that said, I hope you have found something to take away from this article or at least it has made you take a second to think about what you do on a daily bases. Do you still feel a sense of pride for the service you provide your community? You absolutely should. Without operators the toilets wouldn’t flush and the taps wouldn’t turn on. If you are feeling underappreciated in the community, just remember, when you are doing your job right, frequently no one knows you exist. This is because everything is working correctly. With that said take some pride in the essential services you help to provide and I will see you down the road. 💧



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Invasion of Microscopic

by Tim Tice, Projects Manager

As water operators of CWS and NTNC systems, serving greater than 10K population, an IDSE was to be performed through SM, SSS, 40/30 certification or VSS waiver were necessary to determine the levels of DBPs (TTHM and HAA5) as they are discovered in the distribution system when a disinfectant is added to the drinking water. The exception is UV. DBPs are a result of a disinfectant, added to the water to combat contamination coming in contact with organic and inorganic matter. As July 2010, those CWS systems serving less than 10 K had their IDSE due. Fast forward to October 2013 and Stage 2 DBP rule compliance monitoring begins.

A little clarification please:

- CWS /NTNC – community water system / non transient non community
- IDSE – initial distribution system evaluation
- SM – standard monitoring
- SSS – system specific study
- 40/30 certification
- VSS – very small system
- DBP – disinfection by-products
- TTHM – trihalomethanes
- HAA5 – Haloacetic acids (5)
- MCL – maximum contaminant level
- LRAA – locational running annual average

So what are the steps necessary to stay in compliance with the Stage 2 DBP Rule? With the initial evaluation a water system had four IDSE options:

- A. SM – a year of monitoring,
- B. SSS – using existing monitoring data or hydraulic modeling,
- C. 40/30 certification – uses existing data if all results are under $\frac{1}{2}$ the MCL or
- D. VSS – which a system may obtain a waiver if they serve less than 500 in population

With a compliance monitoring plan (CMP), water systems have to determine the monitoring locations (where it is anticipated with high levels of DBPs), monitoring dates, and compliance calculation procedures. Locations of suspected higher levels of TTHMs include near dead end pipe lines, areas of low flow, adjacent to storage tanks, locations where no residual chlorine is found, or immediately after a booster station. Locations for HAA5s are similar, yet can be different. Such as if there is much biofilm in your system, the highest HAA5s may be near the middle of the system. Monitoring dates for 40/30 certification and VSS waivers are configured using the month with the highest water temperature, which becomes your controlling month. If you have SM or SSS then the schedule was submitted as part of your IDSE final report.

As your CM plan is completed, the number of samples is dictated by both source type and population served. For most small groundwater water systems serving less than 500, a single annual sample for both TTHMs and HAA5s will be suffice. To qualify for “reduced monitoring” a system, that monitors annually, must have LRAAs of

Acronyms

TTHMs less than or equal to 0.60 mg/L or HAA5s less than or equal to 0.45 mg/L.

If the water system stays in compliance, a three year monitoring reduction can be issued. Just as monitoring plan timelines can be reduced, they can also be increased if any single sample at any single location exceeds the MCL. FYI, just like the coliform sampling plan, the CM plan also requires a map depicting the locations of where the samples are taken. Putting the new map into the O&M manual is also important.

There is more to the rule than what is written in this article, so please review the rule by going to: <http://public.health.oregon.gov/HealthyEnvironments/DrinkingWater/Rules/Stage2/Pages/index.aspx>. Also, you can call your sanitarian or contact OHA DWP staff to ask for the 411. We at the association would be happy to assist in answering your FAQ. Remember the compliance date has past us by, so the compliance requirements are needed ASAP. TGIF as this article is being completed and it's time for some RNR. The best that life has to offer! ♦



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Odds and Ends

by Scott Berry, Circuit Rider/Program Manager

GET THE LEAD OUT

The January 4, 2014 deadline for the implementation of amendments to the Safe Drinking Water Act (SB 3874) is upon us. Most water systems have made their preparations and changes already, but for those that haven't, here are the important details:

The wetted surface of pipes, fixtures, and fittings used for potable water cannot contain more than 0.25% lead if installed after January 4, 2014.

Appurtenances installed prior to that date do not need to be replaced to meet compliance with the new regulation. All appurtenances installed after the deadline need to meet the NSF-61-G and NSF-372 criteria.

Exempt from the legislation are non-potable water sources and water distribution main gate valves that are 2" or larger. There has been discussion lately about whether or not fire hydrants meet the criteria for exemption, Stay tuned.

OAWU WEBSITE GETS A FACELIFT

The Oregon Association of Water Utilities website is in the process of getting a complete makeover. The new website, which should be up and running by the end of January 2014, will have several new features that will benefit our members. It will be possible to register and pay for

classes. There will be a news feed to let the users know what's happening in our industry around the state.

OAWU TRAINING

We are always trying to find new ways to bring quality training to water and wastewater operators around the state. New for 2014 will be a class designed by water and wastewater Managers that will provide in-depth training on Financial, Technical, and Managerial Stability and Capacity Development. Other training methods we have discussed are: Technology specific training that would be taught at water and wastewater treatment plants by those that operate the plants. The classes would cover the theory, operation, and troubleshooting of those facilities. We are looking for operators that would be willing to work with our staff to develop a class outline and pass their knowledge on to others in the industry.

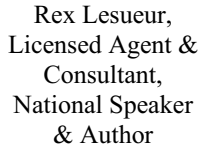
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OAWU will start working with the Oregon Employment Department and the Oregon Department of Veterans Affairs to provide employment opportunities for our Veterans. We will be matching those that have positions open with Vets that are looking to get into a career in the water and wastewater industry. Please help us by letting us know when you have positions open. 💧

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Morals vs. Ethics

by Hans Schroeder, Circuit Rider

We are raised with our morals; they develop us into who we are in our everyday life. They help to mold us into the person we want to be. Through our adolescent life we are morally influenced by our parents, family, peers, and pastors into the person they would like us to become. When we reach our adult life we must make our own choices; do we believe in all the morals that were instilled in us or do we take our life experiences and adapt them? Not all families lead idyllic lives, so their morals may be skewed by how they were brought up and what their family's morals were.

As we work in our public lives we need to remember this and try and lead by example; people in our society, no matter what their age, can learn how to be a better person.

I was taught by my parents to respect my elders, now in our society that doesn't always seem to be the case. Have you ever had a boss or councilor that just didn't live up to your standards? Did you give them the respect they deserved because they were in a senior position? We don't always have to agree with them or like what they do, but I have learned that we should always respect them. Learn what we can council with them about and what we cannot. I am sure there is another person that would be more of a benefit to you, but do you have to respect them morally?

Although many people say morals and ethics go hand in hand, the way I like to differentiate between the two is: morals are my personal beliefs, what I consider to be important to me on how I treat the people around me. Ethics are how I look at my work, especially when I was in the public

sector. All public employees should have taken the course on Ethics in Oregon last year. They sponsored many classes around the State and it was a requirement for anyone filling a capacity in the public sector, including all City employees, mayors, councilors and commissioners. The classes taught many things some were quite obvious, for example: you should never use City equipment for personal gain; don't go out and install a new retaining wall in your backyard using the City's backhoe. Other points were crossing into our personal morals, the elderly lady down the block needs help moving a boulder or simply needs help maintaining her weeds, although morally you believe you should help, you need to be helpful on your own time, with your own equipment. Do not be there during City time or using City equipment to help anyone out. Another point to be remembered, in smaller communities, is that we use local businesses in the everyday scope of the City's work. Please remember that a councilor or Mayor related to that business cannot vote on paying the bill or sign the check, this is ethically not accepted!

Another big point morally; you want to help your family or friends by giving them a helping hand. It is never a good idea, ethically, to hire family or friends and it can be perceived by the citizens as a form of nepotism.

If you would like to do a little further research into ethics in the public sector the Oregon Government Ethics Commission has a great website: www.oregon.gov/OGEC. 💧

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Can Parasitic Worms Get Into Drinking

On August 26, 2013 a small Oklahoma town was advised not to use the tap water for cooking or drinking, because red worms had been found in the town's drinking water supply. The Oklahoma Department of Environmental Quality (DEQ) conducted an investigation and determined that midge flies entered the system through sand filters at the water treatment plant. The flies laid their eggs in the filters and when the eggs hatched the red worms simply swam into the water supply.¹ Fortunately, these worms were not parasitic, but several parasitic worms could get into drinking water systems: Roundworms, flukes, and tapeworms.

These parasitic worms are transmitted by direct contact with their eggs, consuming a host that has the parasitic eggs, or consuming the feces of hosts that contain their parasitic eggs. Once consumed, the parasitic eggs hatch and attach themselves to the intestines. Some stay in the intestines, but others travel to various organs and parts of the body to cause damage, while they continue to grow and multiply!

HOST AND THEIR ENVIRONMENTS

Hosts can include: aquatic life, insects, birds, rodents and other animals. They can gain access to drinking water through openings on tanks. Aquatic hosts can travel through the inlet or outlet pipes depending on the tank's source of water. Aquatic life is often found in tanks that receive their water from lakes, streams, rivers or other waterways. A few years ago, more than 50,000 gallons of mud and aquatic life were removed from a two-million gallon tank in New York, and in Georgia, a fish swam past the camera during an inspection. These are all potential parasitic worm hosts!

Other hosts can gain access by holes in the roof, shell, or floor. Gaps between the roof and shell, vents or overflows with torn or missing screens can allow insects, birds, and other small animals into the tank. If birds and insects are in the tank, then their feces and the possibility of parasitic eggs are also in the tank. Human beings that consume the contaminated water become the next host, where the parasitic worm continues to grow in them for years. Another disturbing fact is that these openings often go unnoticed until an inspection is performed, that means this potential risk could go unnoticed for years!

Stagnant water also contributes to contaminated water. The stagnant water creates a list of microscopic organisms and bacteria that lures potential hosts into the tanks. Stagnation occurs when water is separated into layers arranged by density; the least dense and warmer water sitting above the denser cooler layers of water coming in. The layers are caused by differences in temperature, pressure, and pH. These unmixed

layers cause water quality to deteriorate and age, increasing bacterial growth. Flies, mosquitoes, water fleas and other insects and crustaceans are attracted to the bacterium and birds are attracted to the insects.

MEET THE PARASITES

Roundworms Water fleas are possible hosts to the *Dracunculus* larva, a type of roundworm that causes a horrific disease known as guinea worm disease (GWD). Once the infected water fleas are ingested, stomach acid dissolves the water flea, but not the *Dracunculus* larva that hatches and travels to connective tissues. Often, no symptoms are noticed until approximately one year later, when the disease and worm presents itself with a painful, burning sensation, as a blister on the skin forms. About a week later, the blister ruptures exposing one end of the worm. Often, the infected person immerses the affected area in water to relieve the pain, but then hundreds of thousands of larvae contaminate the water, allowing the cycle to repeat again. To extract the worm, a person must wrap the live worm around a piece of gauze or stick. The process can take hours to months and great pain accompanies it.²

Other parasitic roundworms include: pinworms, hookworms, *Ascaris*, *Baylisascaris*, and *Strongyloides Stercoralis*. Pinworms are said to be the number one parasite in North America and the eggs can become airborne, living for days without a host. Hookworm eggs can live without a host for weeks, and *Strongyloides Stercoralis* can live with or without a host. *Baylisascaris* and *Dracunculus Insignis* are found in dogs, raccoons, minks, foxes, otters, skunks and other small animals of North America.³ Just last year, a decomposing raccoon was found in a Virginia ground storage tank, and a dead squirrel was pulled from a Missouri ground storage tank.

Ascaris worms are roundworms that cause respiratory problems, and live worms may be observed in the stool or exiting through the nose or mouth! According to Human Diseases and Conditions, "It has been estimated that 4 million people in the United States carry *ascaris*, most of them in rural southeastern areas."⁴

May 24, 2013, The Center for Disease Control and Prevention (CDC) reported in their Morbidity and Mortality Weekly Report that, "During April 2010- March 2013 the Maine Department of Health and Human Services investigated multiple cases of ascariasis that have been reported by health-care providers, veterinarians, and patients. After investigation, 14 persons on seven farms in Maine were identified with *Ascaris* infection."⁵

Flatworms The Trematodes (flukes) are found worldwide, and their common hosts are fish, snails, water plants and fish eating animals. These

potential hosts are found and removed from water tanks yearly! Flukes are flatworms that live in the intestines, tissue, lungs or blood depending on what kind has infected the body. The *Fasciolopsis Buski* (intestinal fluke) infects the small intestines, and the *Fasciola Hepatica* (liver fluke) infects the biliary ducts and gall bladder. The *Paragonimus Westerni* (lung fluke) is found in the lungs and is sometimes mistaken for lung cancer. The *Schistosoma* (blood flukes) are found in the blood and travel all over the body causing damage to red blood cells and organs. People infected with blood flukes get sick, weak and often die.⁶

Tapeworms The Cestodes (tapeworms) include: *Taenia Solium* (pork tapeworm), *Taenia Saginata* (beef tapeworm), *Diphyllobothrium Latum* (fish tapeworm), *Hymenolpis Diminuta* (rat tapeworm), and *Hymenolepis Nana* (dwarf tapeworm). The pork tapeworm can cause Neurocysticercosis (NCC), an infection of the brain or spinal cord. According to the American Academy of Neurology, "Neurocysticercosis is typically considered a disease of the developing world. Nonetheless, NCC is also diagnosed in the developed world. The disease now is on the rise in developed countries such as the United States, Canada and the United Kingdom."⁷

January 15, 2013, a NewRX editor of Life Science Weekly reported that, "Baylor University College of Medicine stated, "The rise in the number of cases of NCC in developed countries, especially in the United States of America, has largely been driven by influx of immigrants from endemic to non-endemic regions and the widespread access to neuroimaging. Cases of local transmission have also been documented particularly in the setting of a tapeworm carrier present in the household, with highlights the relevance of NCC as a public health problem in the USA. We estimate that between 1320 and 5050 new cases of NCC occur every year in the USA."⁸

The beef tapeworm eggs can survive for months in the environment, and the fish tapeworm eggs mature in the water within three weeks. Tapeworms of wild animals can cause Alveolar Echinococcosis disease that mimics liver cancer and cirrhosis of the liver. Rat tapeworms and dwarf tapeworms are found in the feces of rats. Beetles and fleas eat the feces and become the new host. Several years ago, twenty-four dead rats were pulled from a Maryland water tank, and everyday insects and beetles are found in tanks!

PREVENTION

Prevent the potential hosts from entering the tank by getting it inspected for openings that could lead to unauthorized access. Screens, free from rips or tears, should cover all pipe openings. Holes and gaps should be sealed or welded. Roof

Oregon Association of Water Utilities

Water Tanks?

By Erika Henderson, Director of Research for Pittsburg Tank & Tower Inc.

manways and hatches should seal tightly and a lock should be placed on them. Ladders should have appropriate ladder guards and locks to prevent people from entering the tank or placing potential hosts into the tank.

Clean and disinfect water tanks regularly. America Water Works Association (AWWA) states that, "Tanks should be washed out and inspected at least once every 3 years, and where water supplies have sediment problems, annual washouts are recommended." (AWWA M42-92)⁹

After reading this article, biannual inspections and cleanouts are probably more desirable. Water tanks can be taken out-of-service and a trained professional can physically enter the tanks to inspect and clean them, or a robotic inspection and cleanout can be performed. A robotic inspection does not require draining the tank and there is no downtime, liability, or water loss. Lockout/tag out procedures and confined space permits are not needed, because no one enters the tank. The robot is equipped with lights and a color camera, and live viewing of the inspection takes place through a ground monitor. A DVD of the inspection is provided and both forms

of inspections come with a written report that includes a detailed evaluation, photographs (hopefully, none with potential parasitic hosts), recommendations of needed repairs, code updates, and a cost estimate for each item.

After an inspection has been performed and the condition of the tank has been determined, please address the issues. If the tank needs to be cleaned, then please clean it. If the water temperature during the inspection indicated possible stratification, then please take necessary steps to eliminate it. A mixing system may need to be installed to prevent the stratified water, and the water may need to be tested and treated more often.

Everyone deserves clean and healthy drinking water free from parasitic worms. Please take all necessary precaution to prevent potential hosts from getting into drinking water tanks and spreading these horrific diseases that result from the infections. Keep in mind- this article only discussed multi-celled parasitic worms that could potential get into drinking water tanks. Another list of various single-cell parasites, viruses, and bacteria could also be lurking in drinking water tanks waiting to attack human cells! 💧

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OREGON ASSOCIATION OF WATER UTILITIES 2014 TRAINING & EVENTS SCHEDULE

Date	Class Title	Location	CEU Information	ESAC#	Fee/Free
January 28	Control Valves	Beaverton	0.7 Water/Wastewater	2286	FREE
January 29	Advanced Control Valves	Beaverton	0.8 Water/Wastewater	2670	Fee
March 3-7	36 th Annual Management & Technical Conference	Sunriver	2.4 Water/Wastewater	TBA	Fee
March 25-26	Wastewater (WWT/WWC) Certification Review	Salem	1.4 Wastewater/0.6 Water	2295	Fee
April 8-10	Water (WT/WD) Certification Review	Bend	1.8 Water/0.7 Wastewater	2112	Fee
April 16	Rule Update-DBPR, RTCR, LT2	Newport	0.4 Water	TBA	FREE
April 22	Math for Operator's	Eugene	0.6 Water/Wastewater	TBA	Fee
April 28	Wastewater Treatment, Collections & Regulations	Bend	0.7 Wastewater	TBA	Fee
April 30	Wastewater Treatment, Collections & Regulations	Salem	0.7 Wastewater	TBA	Fee
May 6-8	Water (WT/WD) Certification Review	Salem	1.8 Water/0.7 Wastewater	2112	Fee
May 12-13	Utility Management Certification	Willamette Valley Area	1.4 Water/Wastewater	TBA	Fee
May 14	System Engineering	Salem	0.4 Water/Wastewater	TBA	Fee
May 14	Wells	Salem	0.4 Water	TBA	FREE
May 15-16	Water & Wastewater Field Operations & Safety	Salem	1.6 Water/Wastewater	TBA	Fee
May 28	Math for Operators	Portland	0.6 Water/Wastewater	TBA	Fee

2014 State Water exam dates	Application deadline	Oregon ESAC/CEU accreditation
May 15, 2014	March 15, 2014	Phone/Fax: 503-698-8494
October 16, 2014	August 15, 2014	info@oesac.org www.oesac.com
For additional water exam information, please visit http://public.health.oregon.gov/HealthyEnvironments/DrinkingWater/OperatorCertification/Levels1-4/pages/exams.aspx		

2014 State Wastewater exams: year-round, open schedule

All categories: <http://www.deq.state.or.us/wq/opcert/stpoperexamsqry.asp>
For further wastewater exam information, please visit <http://www.deq.state.or.us/wq/opcert/opcert.htm>

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

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

Who Discharges at Your Facility?

As we see more and more of the larger communities refusing to take on Grease (FOG), Septic and Chemical Toilet materials, many hauler/pumper companies are moving to smaller communities for their discharge. And with the ever growing oil and gas exploration business in the United States, many municipal wastewater systems are agreeing to receive these materials in the wastewater streams. The reason that many of the larger wastewater systems are refusing to take hauled materials is because they have seen what it can do to their plants. They are seeing their digesters die, lagoons die and increases in solids and odor, just to name a few. We find that the smaller cities and towns are, now, contracting to take this material, because the hauling companies offer to pay them significant amounts of money for this service. We have seen charges as low as two cents per gallon and as high as 15 cents per gallon. If you agree to take on this waste, make sure you are comparable to others

in your area on cost. Also, try to set your charges to insure that you are adequately compensated for any additional costs you may experience for the maintenance and possible retrofit your system may require.

In reality, is the added income enough to offset the added cost of operations for the system? Will the added load cause the wastewater system to be out of compliance on their NPDES or DPHE permits?

Once, the dischargers quit using your system, are there any residual effects or problems that may become an ongoing or costly fix for your system. The answer is most definitely, YES!

What are the issues you could be facing in the short and long term? One, is the added loading of these sometimes caustic materials that can completely kill all the biology in your system. We are seeing this happen in many communities across the country. Some of them are being killed off monthly with materials from septic and oil field haulers.

The addition of these types of hauled waste can significantly increase the BOD load in your system and also, the TSS load. This can cause your system to loose efficacy and eventually throw you out of compliance on your NPDES or DPHE permits. The amount of BOD load in these materials can be in excess of 2000 ppm and TSS can be even higher at 10,000 or more. Fats, Oils and Grease (FOG) can exceed 150 ppm. And that does not take into consideration the chemicals that are in the material, many of which are not friendly to your Bacteria.

And of course, grease or FOG haulers can impact your system with additional BOD, TSS and in some cases massive amounts of foaming.

Oil field waste can contain high concentrations of petroleum hydrocarbons along with chlorines and other cleaning chemicals. None of these will be beneficial to the natural occurring bacteria in your system.

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...And more importantly, should you allow this to happen?

These types of dischargers to your system can cause a significant increase in solids build up in your system, causing activated sludge plants to waste, handle and haul more solids. Also, due to the additional loading you may be required to run parts of your system harder, like aeration and mixing.

In a lagoon system, they can cause an increase in sludge layer, which eventually will need to be dredged. At an average cost of between \$100 and \$300 per dry ton, this will be costly to mitigate. Wyoming Rural Water developed a sludge cost calculator that may be of interest to you. It will help you determine the cost of removing your existing sludge. And will also help you to determine some of the additional costs in the future. Please, contact Mark Court at Wyoming rural water for assistance with the calculator.

Depending on the type of materials that are being discharged to your system, you may also run into land use issues with the sludge

or solids. This could cost you more due to the dewatering and handling requirements if the sludge is contaminated.

Now the question arises, how should you handle these materials if you decide to accept them at your plant? We have seen many scenarios over the years. Some include receiving the materials at the farthest point away from the plant as possible. The theory being there will be additional mixing and blending in the lines. Others have large tanks or ponds which allow them to trickle feed the septic, grease or chemicals into the plant. This way they do not have a shock to the system. And lastly, some just have it dumped in at the head works (NOT RECOMMENDED).

Another concern for communities is the local RV park and, more importantly, do you have an RV dump? We have seen many systems killed from the materials being discharged at RV dump stations. Make sure you are monitoring your RV dumps, which

may include keeping it locked unless a city employee is there to supervise. A lot of Crystal Meth chemicals are being injected (yes, an intentional play on words) into your systems through these sites.

Ultimately, the decision is yours. What are the positive aspects (usually money) versus the negative aspects (usually compliance issues and money) to determine if you really should do this? I recommend that you work closely with the circuit riders from your state to make sure you are covered and that they agree with what you want to do. Remember it takes a long time and lots of money to restart a system if dies.

If you need more information or have any questions contact me, Rick Allen, via phone at (303) 888-2008 or via email at rick@environmentaltrainer.com. 💧

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BioLynceus August 2013



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Tools for Sustainability

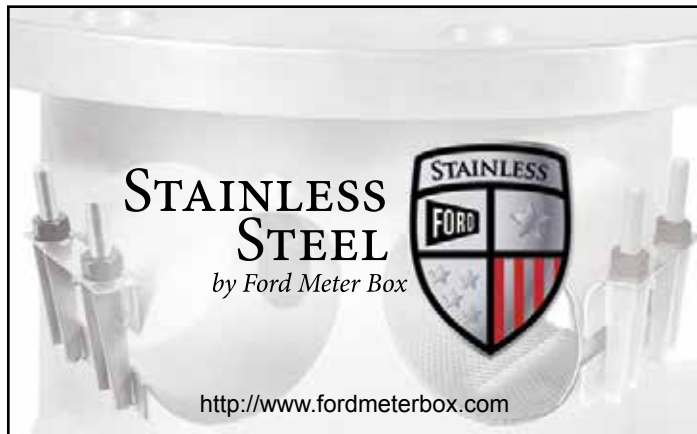
USDA Rural Development and EPA have worked together to develop two new tools that are designed to increase sustainability in rural and small water and wastewater systems.

The first tool is "Rural and Small Systems Guidebook to Sustainable Utility Management". This Guidebook takes small systems through a series of steps to assess their current operations based on ten key management areas developed using best practices. The Guidebook allows rural and small systems to assess their strengths and helps to prioritize areas for improvement, which will lead to an action plan to address those priorities and challenges. The Guidebook also contains an extensive inventory of other utility management tools to help rural and small systems.

The second tool is called "Workshop in a Box". The Workshop contains materials and instructions to help both small systems and technical assistance providers market and conduct workshops on their own based on the Guidebook. These materials can be used either in a group setting with several systems, or on-site with a team of individuals from a single system.

Increasing sustainability at water and wastewater systems in rural communities will help develop greater environmental protection and economic opportunities. ♦

Adapted from John C. Padalino, Administrator, U.S. Department of Agriculture, Rural Utilities Service



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DEQ Updates O&M Manual Guidelines

DEQ has updated its guidelines in Preparation of Operations and Maintenance Manuals for Domestic Wastewater Treatment Facilities. The updated guidance is posted at: <http://www.deq.state.or.us/wq/rules/div052/guidelines/stpommanuals.pdf>.


The guidance primarily applies to mechanical domestic wastewater treatment systems that discharge to surface waters under a National Pollutant Discharge Elimination System (NPDES) or irrigate recycled water under a Water Pollution Control Facility (WPCF) permit.


The Oregon Administrative Rules require domestic wastewater treatment facility owners to prepare and receive ODEQ approval for an O&M manual prior to operating. The general contents of the manual must include: Emergency Operations, General Information, Operation and Control of Unit Processes, Operation and Control of other Mechanical Systems, Regulatory Documents, and an Appendix with: as-built drawings, manufacturer's O&M literature, WWTP Operating References, and Post Startup Addendum.

OAWU offers classes to help operators update O&M Manuals. More information is available on page 26 or at oawu.net. ♦

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QUIZ CORNER

Due to a production error, some of the questions in the Fall 2013 issue were incorrect or misordered. That issue's Quiz Corner appears again here with corrections. We apologize for any inconvenience this error may have caused.

1. The threshold limit value concentration for chlorine vapor is _____.
A. 0.1 ppm C. 0.5 ppm
B. 0.3 ppm D. 1.0 ppm
2. Acids should never be added to chlorine solutions because they...
A. Cause chlorine gas to be released
B. Corrode or "eat away" the solution tank
C. Decrease the disinfecting properties of chlorine
D. Result in the formation of a chloride precipitate
3. Presently a Source Water Protection Plan through OAWU will cost a 250 connection system how much?
A. \$5.00 per connection or \$1250.00
B. \$0.50 per connection or \$125.00
C. No direct charges. It's a congressionally funded program through USDA – FSA
D. Flat fee of \$6500.00
4. In the world of Source Water Protection, what does BMP stand for?
A. Basic Metabolic Panel
B. File Image BitMaP
C. Best Management Practices
D. Bio Mechanical Process
5. What is the Drinking Water Standard for Nitrate?
A. "Blue Baby" disease C. 10 mg/L Nitrate – N
B. Nitrite D. Septic Tanks
6. According to environment.nationalgeographic.com what generally accounts for the greatest use of household water?
A. Washing machine C. Shower
B. Dishwasher D. Landscaping
7. According to environment.nationalgeographic.com how many gallons does the average washing machine use per load?
A. 8 C. 41
B. 25 D. 84
8. According to environment.nationalgeographic.com how many gallons of water are wasted in an average home each year due to leaky household pipes?
A. 3,000 C. 9,000
B. 5,000 D. 11,000
9. If 40 pounds of chemical are added to 120 gallons of water, what is the percent strength of the solution by weight?
A. 2.1% C. 5.2%
B. 3.8% D. 8.4%
10. Which is the largest zone in a conventional clarifier?
A. Inlet Zone C. Outlet Zone
B. Sludge Zone D. Settling Zone
11. What is the purpose of the Surface Water Treatment Rule?
A. Develop regulations for treating surface waters
B. Ensure that pathogenic organisms are removed and/or inactivated by the treatment processes
C. Identify appropriate locations for application of disinfectants
D. Remove turbidity from surface water
12. How many feet are in 1 mile?
A. 4260 feet C. 5280 feet
B. 4725 feet D. 6000 feet

ANSWERS
1-C, 2-A, 3-C, 4-C, 5-C, 6-D, 7-C, 8-D, 9-B, 10-D, 11-B, 12-C



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Marketing

Throwing My Loop
by Michael Johnson

Marketing (mar-ket-ing) - a sequence of activities comprised of (1.) product or concept development (2.) product creation (3.) determining pricing and (4.) finding outlets or distribution channels to sell that product.

As a young man, I had no interest whatsoever in all that "Marketing" had nothing to do with me. I wouldn't have taken a marketing class if you paid me. Later, I would pay other people plenty to tell me all about it. At one point, I thought "marketing" was a waste of time. Now I half-jokingly say there should be a federal law requiring marketing classes a full half-day in all schools from first grade through Ph.D. Years passed in my life before I realized a simple and powerful truth...if you can't tell people what you do, your business won't do very well.



Herman Melville died a pauper because nobody knew Moby Dick was in the bookstore.

First, let's say you have created a product. Doesn't matter if you're a dentist, a counselor, or horse trainer. Regardless of the product, let's assume you have something, and you want to earn your daily bread by selling that thing to the world. How do we do that?

First, be warned. There are so many people that will tell you they know how to do just that - to sell that product for you. What I'm about to say is a difficult concept to grasp, but it's true. No one can sell your product like you can. No one will care as much about it as you do. No one will work as hard for you as you will. Most people I know who live using their wits - writers, business owners, horse trainers, etc., - don't enjoy marketing nearly as much as practicing their craft. When someone says, "I have an idea for something I want to do," my first question is, "How do you plan to get 'it' out there? How will you get that in other people's hands?" Their response is often, "Oh, I don't want to do that part of it. I'll get someone else to do that. They will do that." No, they won't.

Most of us operate under the assumption that when we one day finally do something, someone will come along and after seeing how wonderful our concept is, this "Lone Ranger" person will solve our every difficulty. Here's some news...he ain't comin'. There is one person you can depend on all the time. That person is you.

And most of us operate under another assumption - and when you think about it, this one is odd. When we are considering doing a particular thing, for some reason we must ask others what they think. "Is this good enough?" "Do you think this will work?" We seem to be required to seek

"permission" or "approval" from those around us before we begin. Get ready to be told your idea won't work, and often, that rejection will come from family and friends closest to you. When we ask the person what they think of our idea, they get this smirky little smile on their face and while shaking their head from right to left, say our name three times very slowly - as in, "John, John, John... when will you ever grow up? So many people have gone broke trying to do that sort of thing, and besides, it's time for you to start thinking about more serious matters...like retirement." For some reason, it never occurs to us that this person has never done anything remotely like we are talking about - so how on earth would they know if our idea will work or not? We must be a success in our own bedroom, in our own house, and in our own heart before we ever go out in the world. Faith in the Divine is important. So is faith in ourselves.

And as for the most effective marketing strategy? After interviewing scores of successful people - whether they created robotic toys, gave golf lessons, wrote books, or made saddles - there was a common refrain from all. "I wish I could tell you I had a professional portfolio and slick presentation," said one, "but the truth is I worked hard to create something of quality and value, and then, I just asked people if they would try my product. I asked a lot of people for a long time." No mystery there. The most effective marketing strategy? Hard work and sustained effort, and telling people about the passion you have for your product. And remember - no matter how high-tech our world may be... nothing beats positive "word of mouth."

"If you don't toot your horn, somebody will steal it."

—Lyndon Johnson

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36th Annual Management and Technical Conference 2014

This year's conference in Sunriver, Oregon is quickly approaching. Registrations are limited so sign up soon.

For more information and registration please go to www.oawu.net.

Also, for those that wish to attend OAWU's annual business meeting, it will be held at Sunriver Tuesday, March 4th at 5:30pm in Landmark rooms I & II.

Award Nomination & Scholarship Forms at www.oawu.net
March 3-7, 2014 • Sunriver, OR

Also coming soon: OAWU Summer Classic in Seaside, August 18-21, 2014

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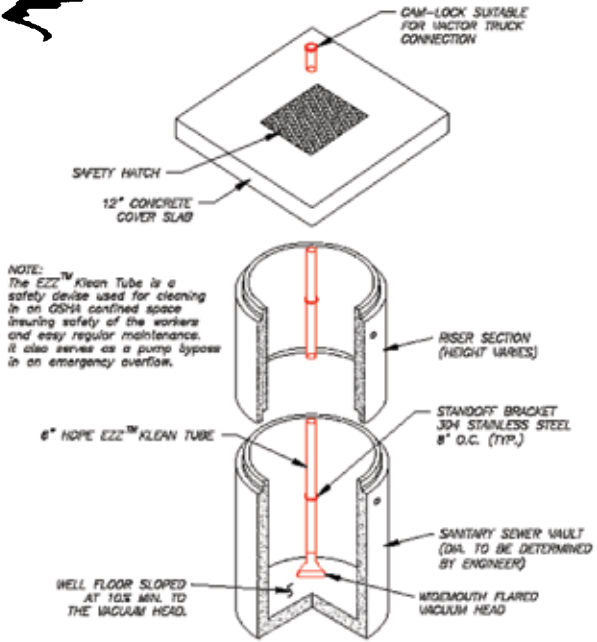
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System O&M Manuals Required

***Have you completed your
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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 your Association for further information.

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OAWU's 2014 Annual Conference Awards



Water operator of the year:

Based on exceptional accomplishments of an individual during 2013. Criteria for nominee:

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

Wastewater operator of the year:

Based on exceptional accomplishments of an individual during 2013. Criteria for nominee:

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

Rookie operator of the year:

Based on exceptional accomplishments of an individual during 2013. Criteria for nominee:

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

Office Manager/Manager of the year:

Based on exceptional accomplishments of an individual during 2013. Criteria for nominee:

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

Nominee's full name: _____

Employer / system: _____

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

Description of nominee's achievements and/or accomplishments:

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

Name of person making nomination: _____

System/company name: _____

System/company phone #: _____

Please return nomination form by Friday, February 3, 2014
Send to: OAWU, Nominations Committee
935 N. Main St. 97351 or Fax: (503) 837-1213
Questions, please call (503) 837-1212

OAWU System Member Scholarship Application

OAWU will be awarding two (2) scholarships for the Annual Management and Technical Conference in Sunriver 2014. These scholarships include registration, conference meals and social functions. Lodging and transportation will be the individual's responsibility. Award decision based upon membership and system need.

Please submit the application form below by January 27, 2014 to: OAWU, 935 N. Main St. Independence, OR 97351, Attn: Scholarship 20134

Name of Applicant: _____

System: _____

Address: _____ City _____ State _____ Zip _____

Phone: () _____ Email: _____

Reason applying for scholarship:

.....

OAWU College Student Scholarship Application

OAWU will be awarding two (2) scholarships for the Annual Management and Technical Conference in Sunriver 2014. These scholarships include registration, conference meals and social functions. Lodging and transportation will be the individual's responsibility. All applicants must be an active college student in water or wastewater. Submit a 500-word typed essay on why you would like to attend our conference and why you chose the water/wastewater industry.

Please submit the application form below by January 27, 2014 along with your essay and mail to: OAWU, 935 N. Main St. Independence, OR 97351, Attn: Scholarship 2014

Name of Applicant: _____

Address: _____ City _____ State _____ Zip _____

Home Phone: () _____ Email: _____

School Applicant is Attending: _____

Field of Study: _____

"Our 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 + 29 cents per hookup
101 to 500	\$80 + 29 cents per hookup
501 to 1,000	\$90 + 29 cents per hookup
1,000 and up	\$100 + 29 cents per hookup
Maximum dues is	\$920.00

Mail payment to: OAWU

935 N. Main Street
Independence, OR 97351

or Submit:

☐ VISA ☐ MasterCard ☐ AMEX

Card #: _____

Expiration Date: _____

Card Security Code: _____

Name on Card: _____

Signature _____

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 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





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
 Banks, City of
 Barlow Water Improvement District
 Barlow, City of
 Bay City, City of
 Bay Hills Water Association
 Beaver Water District
 Bella Casa Mobile Home Park
 Bend Research Inc.
 Bend, City of
 Benton County Service District
 Berndt Creek Water Corp.
 Big Spruce Mobil Home Park, LLC
 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
 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
 Camp Tapawingo
 Camp Yamhill
 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.
 Chaparral Mobile Ranch
 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
 Cloverdale Sanitary District
 Cloverdale Water District
 Coburg, City of
 Colton Water District
 Columbia City, City of
 Columbia Hills Homeowners Association
 Columbia River PUD
 Conagra Foods
 Condon, City of
 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
 Dane Clark Water District
 Dayton, City of
 Dayville, City of
 Deception Creek Mobile Park
 Deer Creek Estates Water Assn.
 Deerhorn Community Water Association
 Depoe Bay, City of
 Deschutes River Improvement District
 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
 Dumbeck Lane Water Association
 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 Mobile Village
 Fossil, City of
 Garden Valley Water Assn
 Garibaldi, City of
 Gaston, City of
 Gates, City of
 Gearhart, City of
 Georgia Pacific-Wauna
 Gervais, City of
 Gilchrist Water Co., LLC
 Gladstone, City of
 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 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
 Heppner, City of
 Hidden Valley Mobile Estates Impr. Dist.
 High Lostine Owners Association
 Highland 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
 Lone, City of
 Irrigon, City of
 Island City, City of
 Jackson County Parks
 Jacksonville, City of
 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-CB-LB 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 Utilities, City of
 Labish Village Water Commission
 Lady Creek Water System
 Lafayette, City of
 Laidlaw Water District
 Lake Grove Water District
 Lakeshore 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



MEMBERS



Lyons-Mehama Water District
 Madras, City of
 Madrone Hill MHP
 Malin, City of
 Manzanita, City of
 Mapleton Water District
 Maupin, City of
 McKay Acres Improvement District
 McKenzie Palisades Water
 McMinnville Water & Light
 McNulty Water PUD
 Medford Water Commission
 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. 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
 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
 Road's End Water District
 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 District
 Salmon River Mobile Village
 Sam's Valley Elem. School Dist. #6
 Scappoose, City of
 Scenic Fruit Company
 Scio, City of
 Scofield Mobile Home Court
 Scotts Mills, City of
 Scrael Hill Water Co-op
 Seal Rock Water District
 Seneca, City of
 Shangri-La Water District
 Sheridan, City of
 Sherwood, City of
 Siletz, City of
 Silver Falls School District 4J
 Sisters, City of
 Skylane Farm
 Skyview Acres Water Co-op
 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
 Springbrook Water Association
 Squaw Creek Canyon Development
 St. Paul, City of
 Staffordshire Water System, Inc.
 Stanfield, City of
 Star Satellite Improvement District
 Steeves Mobile City
 Storlie Water Company Inc.
 Sublimity, City of
 Suburban East Salem Water District
 Sumpter, City of
 Sunridge Estates
 Sunriver Water LLC
 Sunset Acres Water Improvement Co.
 Sunset Water Systems, Inc.
 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 Creamery Association
 Tillamook, City of
 Timber Water Association
 Tingley Lake Estates
 Toledo, City of
 Trappist Abbey

Tri City Water & Sanitary Authority
 Troutdale, City of
 Tualatin Valley Water District
 Tumalo Rim Water Impr. Dist.
 Turner, City of
 Twin Rocks Sanitary District
 Tygh Valley Water District
 Ukiah, City of
 Umatilla, City of
 Umpqua Basin Water Assn.
 Union, City of
 Unity, City of
 US Army/ COE, Cottage Grove Lake Office
 Vale, City of
 Valley View Water Co-op
 Valley View Water District
 Veneta, City of
 Vernonia, City of
 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
 Watseco-Barview Water District
 Wedderburn Sanitary District
 Weiss HOA, Inc.
 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
 Wickiup Water District
 Willamette Water Company
 Willamina, City of
 Wilson River Water District
 Wilsonville, City of
 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.
 Youth With A Mission
 Zig Zag Water Cooperative, Inc.

WELCOME, NEW MEMBERS!

John Marshall
Brady S. Morris
Shawn Seelye
Kamen Thompson
Mark Merry
Ken Woodall
Timothy Waldron

Mitch Nussbaumer
Levi J. Liebelt
Brent Barton
Ronald Lake
Brian Savey
Keith Downing
Bret Stevens

Jorge Gonzalez
Brian Stone
John Thorpe
Brion Barnett
Peter M. Evans
Joe Johanesen
Lester Naught

Ryan Wood
Christopher Sherlock
Edward Simmons
Larry McCauley
Jim Noah
Jeff Buskirk
Mel Vatland

Deschutes River Improvement District • City of Newberg • Little Beavers Preschool • Corix Water Products

INDIVIDUAL MEMBERS

Anderson, James	Claussen, Ted	Germond, Chris	Jauron, Scott	McCauley, Larry	Robertson, Donald	Thayer, Bradley
Anderson, Kevin	Clement, Tony	Gill, Robert J.	Jay, Jerry	McClenathan, Mike	Rosales, Benjamin	Thompson, Jake
Anthony, Joe	Cole, Mike	Ginter, Brian	Johanesen, Joe	McFadden, Tim	Sander, Faye	Thompson, Kamen
Ashenberger, Jacob	Coleman, Chuck	Goetz, Chris	Johansson, Leon	McKinney, Scott	Savey, Brian	Thorpe, John
Baker, Scott	Costantino, Gregory	Golden, Kirk	Johnson, Brandon,	McTeague, Kyle	Schamp, Frank	Tilander, Tim
Baltzor, Rick	Dahlberg, Mike	Gonzalez, Jorge	Johnson, Bret	Meigs, Gilbert	Schmidt, Lonny	Tupper, Sean
Barnett, Brion	Daniel, Morgan	Gonzalez, Roy	Jones, Randall	Merry, Mark	Schmittle, William L.	Turner, Keith
Bartlett, Nathan	Davenport, Ray	Goodpasture, Joe	Jones, Vince	Metcalfe, Micheal	Schnell, Kent T.	Turner, Susan
Barton, Brent	Davis, Guy P.	Grabner, Robert	Kash, Stella	Miller, Paul	Schroeder, Michael	Vatland, Mel
Bateman, James	Davis, Willie Jr.	Graff, Daniel	Katrena, Scott	Mitchell, Joe	Scowden, Mark	Verley, Christopher
Behnke, Bryce	de Paz, Geo	Griffin, Beverly "Bev"	Keenan, Pete	Moniz, Garrett	Seelye, Shawn	Violette, Jeff
Bevard, Cody	Desroche, Ron	Hamilton, Howard	Kirk, Jeremiah	Montgomery, Martin L.	Selshanko, Alexei	Waldron, Timothy
Biamont, Tony	Diemer, Bill	Hammond, Daniel	Klinger, Martin	Montgomery,	Sheppard, Neal F.	Wallace, Neal
Blake, Mike	Dillard, Bob	Hammond, Tim	Kneaper, Jason	Raymond	Sherlock, Christopher	Wanner, Ron
Blezinski, Robert	Dobie, Kevin	Hanes, Cameron R.	Kuhnke, Joel	Moore, Tom	Simmons, Edward	Weaver, Dixie
Block, Delhie A.	Dolbow, Elizabeth	Harry, Jim	Kunders, Aaron	Morris, Brady S.	Smith, Craig	Weaver, Rick
Bradley, Eric	Donaldson, Michael	Hecox, Thomas	Kutsch, Lenard	Naught, Lester	Smith, Larry	Webb, Ryan
Bradshaw, Dave	Downing, Keith	Heide, Tracy	Lake, Ronald	Nelzen, Jerry	Smith, Randall	Wheatley, James
Brault, Craig	Durfee, Kenneth C.	Hemmers, Pete	Larman, Dan	Noah, Jim	Smith, Tim	Whitcotton, Leroy
Brawand, Thomas	Elder, Dave	Hemphill, Brian	Laymon, Mark	Nussbaumer, Mitch	Snegirev, Pavil	Whitlock, George
Brenden, Brook	Evans, Peter M.	Henderson, Paul	Leffler, Charles D.	O'Reilly, Mike	Sollee, James	Wilson, Daniel
Brown, Jeff	Farris, Randy	Hesse, Todd	Lewelling, Keith	Owens, Rebekah	Stark, Chris	Wilson, David A., Jr.
Buckley, John	Fitzwater, Jim	Higgins, Chuck	Liebelt, Levi J.	Parent, Kenny	Stebbins, Michael	Wilson, Rodney T.
Burton, Howard	Flande, Mark	Hodge, Patrick R.	Lund, Darrell	Patch, David	Steele, Mark	Wishart, Jim
Buskirk, Jeff	Forseth, Steve	Hodge, Steve D.	Lund, David	Pendell, Keith	Steidler, Matthew B.	Wolfe, Chad
Carlson, Kimberly	Foster, Rob	Hook, Ryan	Mahoney, Mike	Penhollow, Todd	Stevens, Bret	Wolford, Paul
Carlton, Larry	Free, Derek	Hoover, Max	Maine, Mike	Peters, Kyle	Stinnett, William	Wood, Ryan
Carroll, Jacqueline	Freiwalddi, Zachary	Houston, Colin	Malepsy, Evan	Piccolotti, Jim	Stone, Brian	Woodall, Ken
Carson, Paula	Garrett, Beau	Human, Steve	Malley, Susan	Pinson, James	Stonesifer, Vincent T.	Woods, John
Cass, Bradley	Garrett, Mathew	Hume, John	Mangini, Jered	Porter, James	Strahl, Joe	Woodward, Steve
Clark, Jamie	Gaschler, Steve	Hunt, Kevin	Marshall, John	Powers, Ron D.	Strassner, Bob	Woody, Max
Clark, Kenneth W.	Geiman, Dave	Jacob, David	Martin, Tim	Radford, Bill	Tabrum, Walter	Younger, Lewis S.

ASSOCIATE MEMBERS

4B Engineering & Consulting	Corix Water Products	Instrumentation Northwest, Inc.	Oregon Public Utility Commission	Taylor Made Pump Stations
Abbey Systems, Inc.	Correct Equipment, Inc.	Itron, Inc.	Owen Equipment Company	The Automation Group
American AVK Company	Ditch Witch Northwest	Jordan Ramis PC	OXARC Inc.	The Ford Meter Box Co., Inc.
American Flow Control	DN Tanks	Kennedy/Jenks Consultants	PACE Engineers, Inc.	The Sherwin-Williams Company
American Leak Detection	Edge Analytical Laboratories	Lakeside Industries/EZ Street	Pittsburg Tank & Tower Co.	Titus Industrial Group, Inc
Anderson Perry & Associates	EJ	League of Oregon Cities	Pollardwater.com	TMG Services
Backflow Management, Inc. (BMI)	Engineering America	LiquiVision Technology, Inc.	Public Works Supply	Tripac
Bancorp Insurance	Enviro-Clean Environment, Inc.	M & H / Kennedy Valve	PumpTech Inc	Umpqua Research Co.
BioLynceus, LLC	Ferguson Enterprises	Master Meter, Inc.	RH2 Engineering Inc.	United Rentals Trench Safety
Branom Instruments Co.	Frank J. Martin Company	Mueller Company	Romac Industries, Inc.	USABluebook
Cascade Columbia Distribution Co.	Furrow Pump, Inc.	Neptune Technology Group	Schneider Water Services	Utility Service Company, Inc.
Ch2M Hill - Dallas	GC Systems, Inc.	Olson Engineering	Schoen's Motors	Waterlab Corp
Ch2M Hill - Lebanon	General Pacific, Inc.	Oregon Business Development Dept.	Schroeder Law Offices, PC	Wedbush Securities
CIMCO Sales and Marketing	HACH Company	Oregon Meter Repair	Sensus USA	Whitney Equipment
Consolidated Supply Co.	HD Fowler Company, Inc.		Special Districts Assn of Oregon	Wonderware PacWest
	HD Supply Waterworks			Xylem Dewatering Solutions
				Xylem, Flygt Products

WHY AREN'T YOU A MEMBER OF OAWU?

Serving Water & Wastewater Utilities Since 1977

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

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

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

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



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

Oregon Association of Water Utilities
935 N. Main St.
Independence, OR 97351
503-837-1212 Fax 503-837-1213
Address Service Requested

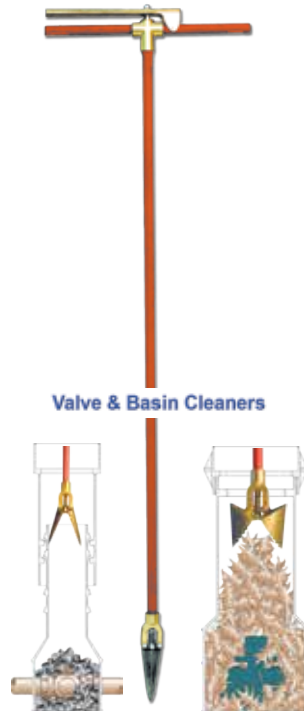


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