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Summer Classic XVIII Highlights

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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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COVER PHOTO Crater Lake, Heath Cokeley

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

Watching Out for the Other Guy

by Heath Cokeley, Circuit Rider

I like anything that has a motor, but that especially goes for bikes. My first dirt bike was a little Honda 50. After that I stepped up to a Trail 90. Which, now looking back, may not have been much of a step up, but I still have it and I like the bike.

After realizing that I have gotten far too stupid to have only two wheels when in the dirt (my buddy's Honda CRF 450 taught me that) I went to four with both quads and trucks, but I still like to have two wheels when on the pavement (when I can get away with it). I have had a few Yamaha road bikes now and my latest is the V-star 1100.

When I am riding what is my most important job? You could say it is obeying all the traffic laws and watching for road hazards, but really on a bike the most important thing, in my eyes, is watching out for the other person. Why would that be? Because it is the other person who is going to pull out in front of you, change lanes into you, or just totally fail to see you when they are driving. Is this their fault? Of course it is, but that doesn't make you any less ran over.

That same mentality goes in life. If you are observant and careful you can drastically reduce the number of times you get railroaded. Watching your contractors and making sure they are completing the work up to the contract requirements is part of that. I am not saying that all contractors are bad or are going to cut corners, but there are a number of them that do. Just being cognizant of that and always double checking their work will go a long way in preventing such things. You can take the same approach with a boss or co-worker. Watching out for them and keeping them out of harm's way is only going to benefit both parties in the long run.

I had a boss one time tell me that part of my job is to know what he wants done next before he knows it. I took what he had said to me and did my best to apply it. I always tried to think a few steps ahead of him so I could have things ready for him prior to each stage in a project. This was not always possible, but I think any of us who have been on a job site can relate to it.

It can be as simple as watching the guy in the hole and having the tool or part he needs next ready for him. For on any job site, especially ones where there is excavation, every position on that job site is vitally important from the Competent Person to the Grunt.

And yes, I know some of you are laughing because you fill both those hats and all others in-between.

The bottom line and the point I am trying to make in this article is: just watching out for yourself and making sure your actions are right and appropriate is not enough in today's world. Taking a step back, observing the situation and basing your decision on those observations could be just the thing that keeps you out from under the tires.

I hope you can find something to take away from this article and as always I will see you down the road. ●







The weather for this year was fantastic and the activities were great. Monday's pre-conference provided a few extra CEUs to those who attended. Tuesday held the evening outdoor barbecue with a meet and greet social, exhibitor prize give-away, followed by a bonfire and horse-shoe games on the beach. Wednesday continued with a full day of classes, some took the afternoon off to participate in the annual Golf scramble at Gearhart Links. Thursday concluded the conference at noon with final words from OAWU's Executive Director, Jason Green, and the highly anticipated raffle drawings and cash prizes.

Thank you to EJ, Xylem Dewatering Solutions, Ferguson Waterworks, and The Automation Group for being this year's conference lunch sponsors. Bonfire beverages were sponsored by Ferguson Waterworks.

The annual golf scramble at Gearhart Links hosted seven teams! See page 6 for photos and winners.

Thursday, during closing session, OAWU gave away over \$600 in merchandise and \$300 in cash prizes.

This year's OAWU Water PAC raffle for a 42" flat screen TV, Blue Ray DVD Player, and a movie was won by Glenn Miller from the City of Dufur.

The Lollipop board prize for a full registration to the OAWU Sunriver Conference in March 2013 was won by Kalista Drake from Pleasant Valley Water Company.

Mark your calendars for next year's Summer Classic XIV to be held in Seaside, Oregon August 19-22, 2013. See you there!

















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OADO'S ADDEAL ORIG Separable Seaside, Oregon – Gearhart Links Golf Course – August 22, 2012

The sun came out after the first few holes, the weather was warm, and the greens were fast; it was a perfect day to hit the links for this year's scramble. The staff at the Gearhart Links Golf Course was accommodating, friendly, and professional helping to make the day even more enjoyable.

Five teams of four and two teams of three (with a ghost player making up the fourth player) challenged the course this year. No one was safe from the errant drive, misjudged chip shot, or the mocking one received when their shot landed two fairways away. The day was very pleasant and the banter helped build camaraderie throughout the golf scramble.

Special thanks to this year's sponsors: The Ford Meter Box, Ferguson Waterworks, Owen Equipment Company, and Mueller Systems for their support of both the attendees and the association. The three winning teams were: 1st place – Steve Wabschall, Ben Shaw, and Chris Young 2nd place – Bryon Boyd, Greg Howells, Rob Jackson, and Brad Lyon 3rd place – Jim Brown, Si Norris, and Russ Thomas

The winners of the golfing competition games were: Longest Drive – Donald Miller KP 1 – Ed Pettett KP 2 – Steve Wabschall Longest Putt 1 – Don Van Veldhuizen Longest Putt 2 – Bill Vanek

Special thanks go out to Mike Collier, one of our Training Specialists, and Heath Cokeley, one of our Circuit Riders, who helped make sure the scramble went off without a hitch.

Mark your calendars for OAWU's next Summer Classic at Seaside August 19-22, 2012. It's a great location to enjoy while you earn CEUs and network with the associate members and your peers.









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Tap Water is the Winner

Submitted by Hans Schroeder, Circuit Rider

Lately I've had many questions about different issues and topics that I have had to personally deal with. As I watch the television, I ask myself, "Is this truth or just another way for the media to twist facts?" Where do we as Americans draw the line as to what to believe and what is fiction? I have found that, to confirm in my mind that something is true, I need to go on my own fact finding mission. Someone else may have a different twist on how they view the facts. All based on beliefs, our upbringing, our religion and also our environment.

My question to you all is this: Is there really any difference between bottled water and water delivered by a municipality? This has been a very "touchy" subject for many years.

There is an old saying, "The proof is in the pudding," or in this case, "The proof is in the regulating". Let's take a look at the requirements regulators impose on these industries, and you can make your own conclusion.

Here are some facts to consider:

1: Our public drinking water supplies are regulated by the Environmental Protection Agency (EPA).

2: The bottled water industry is regulated by the Food and Drug Administration (FDA) but, only if the water is taken across state lines after it is bottled. Consequently, most bottled water is bottled and sold within the same state to avoid any federal regulations.

3: There are no government standards that require bottled water to be any better, safer or more pure than tap water.

Now wait a minute. Given those three statements, and knowing that members in any industry have a tendency to do NO more than what they are forced to do, what would you expect lab tests comparing bottled water to tap water conclude? If you expected there would be no difference, you answered correctly. The Natural Resources Defense Council (NRDC) reported that 60 to 70 percent of all bottled water is completely exempt from the FDA's bottled water standards (due to the reason mentioned above). Here are a few more of the NRDC's conclusions about bottled water regulations versus tap water regulations:

City tap water is allowed no confirmed E-coli or fecal coliform bacteria, i.e. sewage. FDA rules for bottled water actually allow a certain amount of coliform bacteria.

If city water is taken from surface water, like a pond, lake, stream or river, it must be filtered and disinfected. The FDA has no such requirement for bottled water.

Most cities using surface water have been required to test for pathogens (germs) such as Cryptosporidium or Guardia. Bottled water companies do not have to do this.

City tap water must meet standards for a few toxic chemicals, such as polyethylene terephthalate, or PET, a carcinogen that leaches from plastic bottles. The bottled water industry persuaded the FDA to exempt them from any regulations regarding these chemicals.

It's also worth noting the EPA requires local water systems to report regularly on the quality of their tap water. There are no requirements for bottled water suppliers to post quality reports on their labels. The most they have done, so far, is to require bottled water companies to say if they get their water, just like you do, directly from a tap. For example, check out the label on Pepsi's Aguafina.

The FDA summed it up best by saying, "Companies that market bottled water as being safer than tap water are defrauding the American public." Thank you to David Eastham, who is a strong advocate for safe, clean drinking water, for some of the facts stated.

in My Book

So, what can we say is the difference between bottled water and tap water?

The most we can say is: "Tap water comes to you through a pipe and bottled water comes, well, in a bottle."

What's the best solution for you to insure you are getting a good, safe drink of water? Check with the Water Operator of your community, ask questions about samples, frequency of sampling, and also read the Consumer Confidence Report (CCR) that is available from your community water system.

Here are some statistics that I have found on bottled water:

- Sixty million plastic bottles end up in American landfills daily.
- Thirty-eight billion water bottles are discarded into landfills every year.
- Last year, consumers spent \$15 billion on disposable bottled water.

- Bottling water has produced more than 2.5 million tons of carbon dioxide.
- It takes three liters of water to produce one liter of bottled water.
- Consumers use 1.5 million tons of plastic for water bottles each year; less than 25% of this plastic waste is recycled.
- You can get approximately 450 gallons of tap water for the price of one bottle of water.
- If you bought and drank a bottle of one of the more popular bottled water company's products you could refill that bottle once a day for 10 years and 4 months from Pleasant Valley Water Company tap water before their water would cost \$1.95. If the water we use at home cost what even cheap bottled water costs, our monthly water bills would run \$7,500!
- Most municipal water costs under .01 cents per gallon.



• It takes 17 million barrels of oil per year to make all the plastic water bottles used in the U.S. alone. That's enough oil to fuel 1.3 million cars for a year.

Do we, as Water System Operations Specialists, exceed the expectations of our consumers? Do we make a conscious effort to provide the best product for our users?

My personal answer to those questions is: Absolutely!



Greg McDonald

cell - 503-348-5645 503-678-2981 macsafety@publicworkssupply.com

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by Scott Berry, Circuit Rider/ Programs Manager

"Support Our Troops." What does this mean to you? Is it just a popular catch phrase printed on the magnetic yellow ribbon on the back of your car or does it have a deeper meaning? Many of us have paid for a uniformed service member's meal or have offered a heartfelt thank you and a handshake, but we often struggle with finding the next level of support. We, the public works employees, have a tremendous opportunity to provide a meaningful and lasting change for one of the 160,000 Active service members and the 110,000 Reserve and National Guard members that are discharged annually.

When veterans return from serving our country, many find it challenging to obtain employment in the civilian world. According to the U.S. Bureau of Labor Statistics, young male veterans ages 18 to 24 had a 29.1 percent unemployment rate while nonveterans of the same age had a 17.6 percent unemployment rate in March 2012. The staggering veteran unemployment rate over the past few years caused the White House to launch an initiative encouraging businesses to hire veterans and the Department of Labor to create a toolkit for those employing veterans.

Many companies find that veterans make exceptional employees because of their life experience, leadership skills and training. While on active duty service men and women deal with many different circumstances that require them to be very adaptable. The problem-solving skills learned while in the military apply directly to the civilian workforce; anywhere from customer service and support to data analysis and decision making.

One of the best ways to recruit veterans for your open positions is to post your job on a statewide or national forum such as the Oregon Association of Water Utilities' or the National Rural Water Association's websites. Hiring Our Heroes also has a job bank, and have customer service representatives that will help you craft a veteran-friendly job post. Other places to post your opening are on Recruit Military's Resume Database and Job Board. Also, you can search for candidates to hire on Vet Success.

Once you hire a veteran it is essential to provide the support and training needed to help them transition successfully to the corporate world. The culture in the armed forces is very different than the civilian culture. The military has a clear chain of command, duties and structure. "The civilian workforce tends to be more ambiguous. The chain of command is not always obvious and can be somewhat confusing (even for those with no military experience). The work environment may be flexible some days and not on others. and there is not always a standard or equal path to move up the career ladder," states the America's Heroes at Work Toolkit for Employers. While many professionals change jobs often service men and women make commitments that last several years.

It takes a lot of time, money, and other resources to recruit and train new people– that's true for any organization. Taking a chance on a veteran just might yield the most loyal employee you've ever had.

CLEARING UP THE MISCONCEPTIONS

According to John Vogel, Account Executive at HireVeterans.com, the two most common misconceptions employers have about veterans is the impact of post-traumatic stress disorder (PTSD) and their level of education/ability to learn. To clear this up, he offered some thoughts for American employers to consider:

Understand the facts about PTSD: When it comes to PTSD there is no doubt that it is a serious issue in the veteran community. The US Defense Department claims that nearly 20% of returning veterans suffer from some form of PTSD.

However, not all veterans suffer from PTSD and employers need to understand that PTSD is a treatable condition. Before leaving active duty soldiers are tested for PTSD and, if necessary, treated. The fact is that the average combat veteran endures far greater levels of acute stress than any civilian position will likely ever throw at them. Vogel believes that dealing with stress is second nature to a veteran and during these tough economic times this can be a great asset.

Education and the military: One of the biggest complaints I hear from executives is that they can't find learners. The US military offers a tremendous amount of training across all disciplines and relies on the continual learning and adaptation of the men and women in uniform. Our combat troops face new, uncertain, and hostile situations on a regular basis. Adaptability is not only key to their success, it's also key to their survival. It's also important to keep in mind that the modern military is not only high tech, they are leaders in technology. Many service members have highly specialized training in technology that can be leveraged in the private sector.

Need more reasons? Consider the following:

ACCELERATED LEARNING CURVE

Vets have the proven ability to quickly learn new skills and concepts. They possess identifiable and transferable skills proven to achieve success.

LEADERSHIP

Vets understand practical ways to manage and achieve goals in even the most trying circumstances. They are trained to lead by example as well as through direction, delegation, motivation, and inspiration.

TEAMWORK

Vets understand how genuine teamwork grows out of a responsibility to one's

colleagues and how diverse individuals or groups can best work together to achieve overarching objectives.

DIVERSITY AND INCLUSION IN ACTION

Vets have worked respectfully and cooperatively alongside others regardless of their race, ethnicity, gender, religion, or mental and physical capabilities.

EFFICIENT PERFORMANCE UNDER PRESSURE

Vets have the capacity to know how to accomplish tasks on time in spite of stress or adversity. They understand the importance of dedication and perseverance.

RESPECT FOR PROCEDURES

Vets have gained a unique perspective on the value of accountability. They understand how policies and procedures yield stability, safety, and productivity.

TECHNOLOGY AND GLOBALIZATION

Vets are aware of international and technical trends pertinent to business. They bring the kind of global outlook and technological savvy necessary for success.

INTEGRITY

Vets know what it means to do an "honest day's work." This integrity translates into qualities of sincerity and trustworthiness.

CONSCIOUS OF HEALTH AND SAFETY STANDARDS

Vets are cognizant of the importance of health and safety standards. This conscientiousness translates into the protection of self, others, and property.

TRIUMPH OVER ADVERSITY

Vets are individuals who have the proven ability to overcome challenges and obstacles through strength and determination.

TAX INCENTIVES

There are specific tax credits available to employers that hire military veterans. The Returning Heroes Tax Credit for companies that hire unemployed veterans gives a maximum credit of \$2,400 for every short-term hire of an unemployed veteran and \$4,800 for every long-term hire of an unemployed veteran. The Wounded Warriors Tax Credit will increase the existing tax credit for companies that hire veterans with service-connected disabilities who have been unemployed long-term (maximum credit of \$9,600 per veteran) and continue the existing credit for all other veterans with a service-connected disability (maximum credit of \$4,800). ♦

For more information and assistance, give me a call or refer to the following resources:

Gary Dominick, Veterans Program

Coordinator at the Oregon Employment

Department, 503-947-1845. www.

WorkingInOregon.org

www.hireheroesusa.org

http://cms.oregon.gov/EMPLOY/VETS/

pages/index.aspx

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Are We Ready for Change?

by Jack Hills, Source Water Specialist

Time changes things. I suspect that, even as time ages me, my views of change, how I react to change, and how I anticipate future changes, have all changed. Just as one might view a mountain top, it depends upon where you are standing to look at it, to consider what you are viewing. My perspective, and view of life, career, family, friends, community, country, the world, heaven, even eternity, is different as I stand on this end of the life line than say fifty five years ago, when I stood on the other end. Has that span of time and the related changes affected your life? Well maybe you are not there yet, so re-word that to: Will that span of time and the related changes affect your life?

The other day I was walking on forest trails, well it used to be a forest; still trails, but the forest is presently missing where the "B and B" fire took out the trees some eight years ago in the area of Santiam Pass in the Cascade mountains. It's a very different sight than years ago when I took my young boys backpacking into the wilderness. Then it was cool and shady, somewhat dark and eerie, as you could not see very far ahead because of all the trees. "What could be lurking just beyond your sight?" We would walk and walk, uphill grades, switchback turns, with packs weighing us down. "Dad, can we rest again? Where's the water bottle?" Eventually, we would arrive at our planned destination, a small lake where we had planned to pitch the tent and spend the night. Now it looked different. There wasn't the cool shade of the trees, only the bright sun bringing on the heat of early afternoon, and the trail dust from the parched and burned soil. It is definitely a different perspective and view than from the past.

Is it bad? No, not necessarily, depends on how you want to react to it. There are eight years of low growing "snow brush", I think the ranger called it, a bright green glossy leafed plant about three to six feet tall growing throughout the burned area. Actually it's quite healthy looking along, with a number of new young fir trees beginning their generation of a new forest. The amazing thing about the overall view is that now you can see all the details of the terrain that, with the forest, you were previously unable to see. You could only imagine, as you climbed the switchback trail, that somewhere up ahead you would reach the top and level out the pathway ahead. Now you can see all of the ravines, canyons, cliffs, rock out-croppings, the winding trail ahead and even the summit that you'll be glad to reach.

So you ponder, some folks see the devastation that the fire caused and how desolate and deserted the area looks now with its burned out snags left standing. Then you realize time allows, maybe even causes, change to happen. Maybe it isn't a bad thing. It's just that I'm used to my regular ways and not really excited about having to change with the times. I remember my parents marveling at all the changes just in our media and communication technology during their generation and resisting the coming of electronic calculators (paper and pencil would suffice), computers, dial up modems, and email. Bucking the advancement was futile. Even Mom, in her nineties, to be able to keep in touch with her grandchildren, became fluent in keyboarding and email.

Well, I could go on and on about my own experiences, changes that have taken place in my life; just as many of you could also. No one is exempt from experiencing changes, because time continues on despite how we may feel about it. At some point we are going to recognize the changes in ourselves, how we look at things differently, how we react and respond differently than we used to. Sure, we'll see the physical things happening around us; advancement in our technology, the changes in our transportation, even our space exploration. Why, only last night, I watched with my twelve year old daughter the landing on planet Mars, the rover, "Curiosity". I wonder what things will be like for her in another fifty five years. It wasn't that long ago, was it, that we first stepped out on our own planet Earth's moon?

That's enough nostalgia about changes. We know it takes place all around us. It affects us however we allow it to. Most things we have very little we can do to control or direct them. When we do have the opportunity to have input into changes, growth, advancement let us not miss our part to affect change where we can.

One change I'm looking forward to is when that forest has grown back, that I'll still be able to walk my grandchildren back into that wilderness, so they can experience the weight of their backpacks, the steep switch back trail and refreshing forest cool in the shade of the tall trees.

For you water systems, operations specialists and managers, here's a change that you can now access on your computer. Thanks to Salem's paper, Statesman Journal, you can now get a pretty decent map of your source water location, showing the Drinking Water Protection Area (DWPA) and the Potential Contaminate Sources (PCS) of your source of supply. Check it out at http://community.statesmanjournal. com/data/water/. This may be a useful tool for you, to show your constituents to discuss the importance of protecting your water system's supply. If you want some assistance with it or want to develop a full source water protection plan, call us at the OAWU office, 503 873 1212. We are here to serve you.





SDAO SPECIAL DISTRICTS ASSOCIATION OF OREGON PO Box 12613 Salem, Oregon 97309-0613 800-285-5461 | 503-371-8667 503-371-4781 Fax WWW.sdao.com Contact SDAO's Underwriting Department at <u>underwriting@sdao.com</u> Special Districts Insurance Services (SDIS) has over 30 years experience in providing specialized and affordable insurance services to Oregon's domestic water, sanitary, and irrigation districts

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Activated Sludge Troubles

submitted by David Branham, Wastewater Technician

The activated sludge process has experienced operational problems since its inception. Although they did not experience settling problems with their activated sludge, Ardern and Lockett (Ardern and Lockett, 1914a) did note increased turbidity and reduced nitrification with reduced temperatures. By the early 1920's continuous-flow systems were having to deal with the scourge of activated sludge, bulking (Ardern and Lockett, 1914b, Martin 1927) and effluent suspended solids problems. Martin (1927) also described effluent quality problems due to toxic and/or high-organic-strength industrial wastes. Oxygen demanding materials would bleed through the process. More recently, Jenkins, Richard and Daiger (1993) discussed severe foaming problems in activated sludge systems.

Experience shows that controlling the activated sludge process is still difficult for many plants in the United States. However, improved process control can be obtained by systematically looking at the problems and their potential causes. Once the cause is defined, control actions can be initiated to eliminate the problem.

Problems associated with the activated sludge process can usually be related to four conditions (Schuyler, 1995). Any of these can occur by themselves or with any of the other conditions. The first is foam. So much foam can accumulate that it becomes a safety problem by spilling out onto walkways. It becomes a regulatory problem as it spills from clarifier into the effluent.

The second, high effluent suspended solids, can be caused by many things. It is the most common problem found in activated sludge systems. Sometimes a suspended solids problem carries with it a particulate-matter BOD problem if the effluent TSS gets quite high. Ordinarily, one mg/L of effluent TSS produces about 0.5 mg/L BOD5. At low values of BOD5 + TSS, the sum of the soluble BOD5 and BOD from TSS values often equals the TSS value.

The third is high concentrations of soluble materials traveling through the system and not being properly treated. BOD bleed-through is rare in domestic treatment systems where problems are usually related to particulate BOD contained in suspended solids. However, excess ammonia can often appear in domestic effluents. BOD bleed-through is much more common in industrial systems or combined domestic/industrial systems where slowly metabolized compounds cannot be stabilized in a short detentiontime activated sludge system or where toxic materials inhibit the microorganisms' ability to function properly.

The forth general problem relates to low pH. It is found most often in geographical areas with naturally low-alkalinity water supplies where extended aeration and/ or nitrification processes are used. It is usually fairly easy to control. However, the problem can also be caused by low influent pH and in this case the control may be more difficult.

The next part of this article will deal with the procedures that can be used in the troubleshooting process and will be discussed in this section. The troubleshooting process must be systematic if it is to be successful. The "seat-of the pants" approach may work sometimes, but it will not be consistent. The first step is to determine which problem is paramount. Once the general problem such as foam, TSS, BOD5/NH3 or low pH is determined, various tests and observation are made to define the specific conditions.

Once the condition is known, appropriate pressure can be applied to make the treatment system respond. With the required pressure understood, objectives can be developed and specific actions initiated.

shooting By Rothberg, Tamburini & Winsor, Inc, Professional Engineers and Consultants

Sometimes conflicts will arise that do not allow implementation of the required control actions. For instance, if wasting is required, but digesters are full, what actions can be taken? Revised objectives may be in order.

What is "pressure" and how is it used? Pressure is used to move the system from one condition toward another, or to counter naturally-applied pressures such as significant temperature change, inflow/infiltration, toxic loading or organic-load variation. For instance, increased wasting could be used to reduce pin floc. This is an example of using a "growth pressure" or specifically a "treatment growth pressure." Various types of pressure are available to use: growth, dissolved oxygen (DO) and miscellaneous.

Growth pressure relate to making the microorganisms grow faster or slower. A "treatment" pressure makes the microorganisms grow faster by increasing the amount of food each microorganism has to eat or by reducing the time that the organism has to stabilize whatever food is ingested. It makes them convert food to biomass and energy at a faster rate. The sludge tends to be under-oxidized and respiration rate or SOUR goes up. Any action that makes the organisms grow faster provides treatment pressure: higher biomass waste rate, higher return sludge flow rate or conventional-plugflow loading.

The opposite growth pressure is "oxidative". Oxidative pressure makes the microorganisms grow slower. The sludge tends to overoxidize and the SOUR goes down. Reduced waste mass and return rate as well as step-feed/ contact stabilization tend to oxidize the biomass and provide oxidative pressure. These produce oxidative pressure by reducing the amount of food each microorganism has to eat or by increasing the time available for the microbes to stabilize ingested matter.

Pressure can also be applied with dissolved oxygen. Higher DO values tend to increase the oxidizing properties of the sludge,



increase nitrification and produce a floc particle that is heavy and rounded. Conversely, lower DO can reduce or inhibit nitrification and reduce the degree of sludge oxidation or allow the growth of low-DO filaments.

There are also numerous miscellaneous pressures that can be applied for specific purposes. These include such things as nutrient addition, chemical addition for pH control or improved settling, removal of solids recycling within the plant and chlorine or H2O2 treatment of returned sludge for immediate control of some filaments.

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www.dntanks.com Christopher Young, Pacific Northwest Regional Manager christopher.young@dntanks.com

Sustainable Infrastructure



Water "Cash" Flow...

by Tim Tice, Projects Manager

Any practicable business understands how much product or service they provide and if such process is profitable. As each item is carried out from an ordinary retail store a stop at the cashier is required. Yet, this is not typically associated with water sales. It is difficult to scan the bar code on a drop of water. The single most important item to account for water production and water sales is the meter.

Meters can have a profound impact on understanding the balance of water usage and loss from many perspectives. Meters are not only the cash registers of the water system; they will provide the following information:

- evidence of flow from the water source
- quantified evidence of produced water
- a measurement device for both the utility and consumer
- a tool to assist in determining if a water system is profitable or not

There is more to meters than simply placing them in service and reading them at regular intervals. Even though some water systems have meters in place, the task of reading them is not always part of the standard operating procedures or high priority. So the question is: why have the meters?

Meters make it possible to charge customers proportionately for the water they consume through record specific usage. They can be used to educate the consumer as to how much water is being consumed. And, most importantly, a meter can be a tool to assist in detecting leaks and or mainline breaks. How much would a gallon of fuel or gasoline cost if there was no dial register at the pump?

Having meters as part of your water system can be the most underrated tool a governing entity can have. Yet, like any other device, a level of responsibility is required. Remember all the rhetoric that came your way, as a young person, when your parents handed you a BB gun, pocket knife, or even a bicycle. One would be surprised how many times a Scout leader has to stop a young Cub Scout from running with an open knife in his hand.

Meters are sometimes construed as a watchdog device that simply gives the water utility a leg of support in billing. Old meters, poor water quality and/or rate of flows can ill affect the accuracy of the device over the long term, giving evidence that the water meter is archaic or unreliable. The meter can be a great teaching device for all parties. An exact science regarding replacement of these devices and the exact time for water meter



Oregon Association of Water Utilities

Where Does It Go?

failure cannot be measured, though most studies outline the replacement timeframe at 15-20 years.

To combat and prove up the reliability of your water system's meters we can look at meters through three perspectives (known as a meter program):

- Meter testing
- Meter repair
- Meter replacement

Testing is simply creating a standard operating procedure that best fits your water system and then fulfilling the task by actually testing your meters. Repair is the single step of the process that is immeasurable since the time to complete the task is unknown. Meter replacement is the most quantifiable since the water system can establish a justifiable service period and then begin to budget the money necessary to purchase the replacements as the service period nears its end.

The single most important points in establishing a meter program are the accuracy in understanding water flows, the cost associated with production and sales of such. If meters are inaccurate, then one doesn't know the loss of revenue associated with failing meters.

A comprehensive meter program provides accountability, efficiency, and a practice towards conservation. It may, perhaps, keep water rates lower and possibly assist in better accuracy of sewer rates. Meters can provide the evidence needed to make



an informed decision, particularly when monetary budgets are the topic.

There are too many factors that can cause water rates to increase and inefficiency or lack of comprehensive water flows may be the culprit. Too many times we learn through water rate studies discrepancies between water production and water sales. Is it the leaks or the meters? Why not eliminate the idea that "it's the meters" and delve into writing or updating the water meter program. Enjoy the weather as meter reading and other tasks take you outside.

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by Mike Collier, Source Water Specialist

Coliform testing: in case you did not know, this article will be all about the monthly coliform samples that Water Operations Specialists are required to take. There are several important things to remember when taking our monthly samples for coliform. Through this article we will consider the following questions: When to take your test? Where to take your test? How to take your test? And what to do after you have taken your coliform test?

Let's slowly progress through these questions, being sure to answer each in detail. Beginning with the first question: the best time to take your test is early in the month, early in the week, and early in the day. "Why?" You might ask. Taking your monthly samples early will help you with your timing. This will give you time to make sure the results come in and have been sent to the state. Plus, if you do happen to get a positive sample it will give you time to take your repeat samples before the end of the month, hopefully correcting for the positive test result (since a positive result often occurs from human error and not actually from contamination in the distribution system).

Also, taking the test early will give you more time in case something goes wrong on the day the sampling was scheduled. Such as: you don't have a sample bottle, you have a broken main-line that takes a week to fix and you were unable to drop off the sample bottles, the day you had decided to take the samples is rainy and windy (increasing the chances for incidental contamination), or there is something wrong with your sampling site. By attempting to take the sample early you have given yourself more time to get the sample to the lab in case one of the above occurs on the day you had planned to take the samples.

Now for the second question: you should take the samples where the sampling plan says they will be taken. If necessary change your sampling plan so that it reflects the areas that best represent your distribution system. This would not be at the end of a dead end line; that only represents the homes closest to the dead end, not the entire distribution system or the pressure zone you are trying to characterize. Choose an area that best represents the water that is going to the majority of your users. When at the sample site, the more control you have over the site, the better. If you know you are the only one accessing the site and the site is protected from incidental contamination (rodents) - this is best. Remember to not use a sink that has a hot and cold water adjustment on one handle and remember to not test water that has gone through a water heater (these are localized areas for potential bacterial growth and may not accurately represent the distribution system), only sample from a cold water tap.

Next, let us consider how we should be taking the samples. First, be sure that the location is dry and not windy (should be easy on the Oregon coast, right?), try to pick the best day and location that will give a relatively dry and calm working environment. Try to have sampling sites that only you have control over (the cleaner the sample site the less likely you will have erroneous test results). If the only location you have is the outside spigot on a resident's house then take extra time to make sure the area is clean. How do you clean the spigot?

Here are the steps I take: first flush the line until you are sure that the water coming out of the spigot is from your main line and is not "old" water that has been sitting in the resident's lines (at this point it would be a good time to take your chlorine residual), then take a torch and heat up the threads of the spigot – you don't need to get the spigot red hot, just run the torch over them several times (both inside and out) to try and burn off any contaminants. Next, I take rubbing alcohol in a cup and rinse the spigot off, trying to get some of the alcohol up into the spigot. Then turn the spigot back on

until you have a stream about the width of a pencil and again flush it for a few minutes. Now it is time to actually take the sample. Carefully unscrew the cap of the sampling bottle (if the bottle is not sealed with plastic around the cap from the lab, throw it out and use one that is still sealed), be sure to not touch any part of the bottle besides the outer rim of the cap and the outside of the main bottle. Do not touch the threads. or the inside of either the bottle or the cap. Gently tilt the bottle under the water stream until it has filled to the designated marking, being careful to not over or under fill the bottle. Now take the cap, which you are still holding by the outer rim, and gently screw it back onto the bottle. Place the bottle into a clean cooler with ice or a clean ice pack. Then take this sample to lab. I like to take it within the first few hours of

having taken the sample that way I don't forget.

Is that it? Not quite. There are a few more things to do after dropping off the samples to the lab. Remember, we talked earlier about taking the samples early in the month; one of the reasons is that this will give the lab time to test your water, send the results to the state (most labs do this for you), and still gives you time to check the states web-site (you can look up the system's name at the "Oregon public heath, drinking water data on-line" web-site, go down to the bottom of the page and click on coliform results) in about a week to make sure that the state has given you credit for taking your samples for the month. If they have not, call your lab and make sure the lab has given the results to the state. By not

taking this extra step, your system may get a violation (trust me, this has happened to me), it is the Water Operations Specialist's job, not the lab's, to double check with the state and make sure the sampling results were received on time.

It is important to do our due diligence; there is no excuse for increasing my system score due to violations stemming from not checking the states web-site once a month to make sure they have received my coliform sample. Heck, we should probably be checking the information the state has about our system at the "data on-line" site once a month anyway. I think we have gone over the basic nuts and bolts of coliform sampling. Try to take these precautions and steer clear of avoidable positive coliform results and violations. •



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Oregon Launches its First Integrated

The State of Oregon has launched its first Integrated Water Resources Strategy. Adopted by the Water Resources Commission on August 2, the Strategy provides a blueprint for understanding and meeting Oregon's water quantity, water quality, and ecosystem needs now and into the future. The Strategy and its Executive Summary are now available online: http:// cms.oregon.gov/OWRD/pages/law/integrated_water_supply_strategy.aspx.

"This report identifies challenges facing Oregon, from water supply and water quality to ecosystem and habitat," noted Governor Kitzhaber in his support of the Commission's adoption of the Strategy. "It also compiles solutions and actions to address these challenges, and I am committed to working with the Water Resources Department, Water Resources Commission, and our partners to find ways, even in these fiscally challenging times, to implement the recommended actions over time and in a collaborative way."

Using a process that involved extensive public outreach, the Strategy identifies the most critical water-related challenges facing communities throughout Oregon. It offers recommendations in 13 different issue areas to address these challenges. In the short term, the State will pursue those recommendations focused on improved surface water and groundwater data, local water planning, water supply development, instream protections, and funding options to help local communities and state agencies meet their water-related responsibilities. As authorized in ORS 536.220, the Executive Branch will bring policy and funding recommendations in these areas to the 2013 Oregon Legislature for consideration and action.

"Having a blueprint to ensure the state has the right information, trained experts, and stable funding in place to meet our water needs is a crucial step," noted Commission Chair John Jackson. Together with the Chairs of the Environmental Quality Commission, the Fish and Wildlife Commission, and the Board of Agriculture, Chair Jackson wrote editorials early in the process and met with stakeholder organizations to help identify Oregon's water-related challenges.

Oregon has taken the unusual step of crafting a plan without waiting for statewide drought, flooding, litigation, or other crisis, unlike many other states. Also unique to Oregon, this Strategy departs from traditional water supply planning in that it incorporates water quantity, water quality, and ecosystem considerations.

Phil Ward, Director of the Water Resources Department, observed that the Strategy brings several benefits to Oregon. "The recommended actions contained in the

OREGON ASSOCIATION OF WATER UTILITIES 2012 TRAINING & EVENTS SCHEDULE

Date	Class Title	Location	CEU Information	ESAC#	Fee/Free
October 9-11	Water (WT/WD) Certification Review	Salem	1.8 Water/0.7 WW	2112	FEE
October 24-25	Wastewater (WWT/WWC) Certification Review	Salem	1.4 Wastewater/0.6 Water	2295	FEE
November 6-8	Fall Water Operator's Conference	Cornelius	2.0 Water	TBA	FEE
November 21	Mixed Media Filter O&M	TVWD	0.4 Water	2058	FEE
December 4-6	End of Year Operator's Conference	Hood River	2.0 Water/Wastewater	TBA	FEE
March 4-8, 2013	35 th Annual Management & Technical Conference	Sunriver	2.0 Water/Wastewater	TBA	FEE
March 26-27, 2013	Wastewater (WWT/WWC) Certification Review	Salem	1.4 Wastewater/0.6 Water	2295	FEE
April 23-25, 2013	Water (WT/WD) Certification Review	Bend	1.8 Water/0.7 WW	2112	FEE
May 7-9, 2013	Water (WT/WD) Certification Review	Salem	1.8 Water/0.7 WW	2112	FEE
August 19-22, 2013	Summer Classic Conference	Seaside	1.7 Water/Wastewater	TBA	FEE
September 17-19, 2013	Water (WT/WD) Certification Review	Bend	1.8 Water/0.7 WW	2112	FEE
October 8-10, 2013	Water (WT/WD) Certification Review	Salem	1.8 Water/0.7 WW	2112	FEE
October 23-24, 2013	Wastewater (WWT/WWC) Certification Review	Salem	1.4 Wastewater/0.6 Water	2295	FEE
November 4-7, 2013	Small System Operator's Conference	Florence	2.0 Water/Wastewater	TBA	FEE
December 3-5, 2013	End of Year Operator's Conference	Hood River	2.0 Water/Wastewater	TBA	FEE

Please look in the winter issue, coming out January 2013, for additional FREE and FEE classes.

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Water Resources Strategy

document were well vetted with our partners and they represent practical, implementable tasks that we can begin today." He continued, noting that the process itself "established a venue that we will need to utilize as we continue to address Oregon's water challenges. The Strategy's listserve, advisory groups, and web-based resources will allow us to stay in touch with Oregonians who care about having a say in the state's water future." Development of the Strategy involved many Oregonians. The Oregon Water Resources Department led the effort, together with the Oregon Department of Environmental Quality, Oregon Department of Fish and Wildlife, and the Oregon Department of Agriculture. Oregon's tribes, public and private sector stakeholders, and state and federal agencies played a prominent role in identifying water-related challenges and solutions. The Directors of the four agencies convened a Project Team of senior staff members and formed three advisory groups to help with various technical and policy components: a Policy Advisory Group comprised of 18 citizen members, an Agency Advisory Group consisting of 18 economic development and natural resource state agencies, and a Federal Liaison Group comprised of ten federal natural resource agencies. •







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Advancing Water and Wastewater Careers

On August 1, 2012 the Oregon Association of Water Utilities, in cooperation with the National Rural Water Association (NRWA), has launched an initiative to advocate the value of professional careers in the water and wastewater industry and advance the water and wastewater industry. NRWA, through its state rural water affiliates, is the nation's largest water and wastewater utility membership organization in the nation, representing over 28,000 rural and small communities.

According to *Readers Digest Magazine*, there are approximately 108,330 system personnel who operate water and wastewater systems. In the article, these positions are listed as number 2 in the "Top 10 Jobs Americans Cannot Live Without." People employed in these positions have tremendous responsibilities and liabilities, yet are virtually out of sight/out of mind to the public and are often taken for granted. "This lack of recognition, coupled with the impending workforce shortage, is the basis for this career development initiative."

This initiative is just a small step to gain deserved recognition for system operational personnel, who impact our daily lives in what they do, by referring to those positions as "System Operations Specialist" verbally, and in print. Titles project the skills, knowledge and expertise embedded in the industry and these System Operations Specialists should be recognized for the critical positions they hold in our communities. The proclamation is the vehicle that will launch this effort. Its success will be measured by system personnel, associations, and agencies ingraining it into their vocabulary. ●







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HAPPY? Throwing My Loop Michael Johnson

Such a small little word, but so important to us all. We all want to be "happy." Perhaps even more, we especially want our children and grandchildren to be happy. We want them to do well in school, find good and meaningful work, and to be "happy" in life. And when we have been sad for some time, we all think to ourselves, "*If only I could be happy again*." Hmmm. How is it that we do that? What should we tell those we love about finding life satisfaction? I'm not so sure anymore, but there is one thing I'm sure of. It's not where we think, and we need to be careful what we wish for.

One goal we all agree on (without thinking much about it) is that we would be happy if we were really **good** at something. Most every kid in America would love to be a major league baseball player, a star quarterback, or to be known for a deadly jump shot. Or what if we could sing like an angel, or maybe golf our ball like Tiger? Maybe if we were a marketing genius, or even better if our kid became really rich? And most people from my world have - for a lifetime - wanted to rope better than anyone else on the planet. What if we could do any of those things? Would that allow us to never have another bad day?

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I enjoy reading biographies. To read and learn what makes high performers tick is a source of real interest, and after reading them for years, I've begun to see a pattern...

Long ago, I read the story of Elvis' life; the man who really could sing like an angel and about all the millions he made. A few months ago, I read the life story of Steven Jobs, of Apple Computer fame – and his marketing genius that generated billions and changed the way we live. Just lately, I read Hank Haney's story of his time with Tiger Woods and the years Haney spent as the coach of one the greatest talents that ever lived. I have read many others, and after all that time and all those words, there is the strangest thing. No matter what they did, or high they flew, no matter how miraculous their accomplishments, in the stories of all those household names, I never read a word about...happiness.

Late in his life, Elvis was asked, "As a young man, you said when you were grown, you wanted to be rich and famous... and happy. Are you?" Elvis answered, "I'm rich and famous... and miserable." Jobs' life was plagued by contentious relationships, shouting matches, and all sorts of troubles. For all his accomplishments, still Tiger imploded. Howard Hughes died



a recluse in a dark hotel room. Michael Jackson died in debt and in misery.

So what does make us happy? According to Dr. Martin Seligman, the father of Positive Psychology, (and a host of other researchers) there are some answers...

Relationships promote our happiness. May be family, could be friends - humans and animals - if we have connections with other living things, we tend to do better than hermits do.

Faith helps us with life. People who have some religious connection report significantly higher life satisfaction.

Knowing your passion and purpose does too.

Being positive is a key. Some people say you have to be born that way. No.

Being kind, caring, and supportive, generates far more happiness than being cold, brusque, and aloof ever will.

Gratitude is a characteristic of people who report higher life satisfaction. No matter how sad – and true – your story may be, there is someone around the corner far worse off in life... and they are often heard whistling a little tune. Appreciation of the little things in life. Here are a few that fill me with thanks...when the martins come back in the spring, cardinals, wood ducks, my dog, the horses, the barn cats, deviled eggs, tacos, and my wife's barbeque sauce.

Forgiveness – developing the ability to do that helps us a great deal. Especially when we forgive ourselves for some wrong we can't take back.

It is interesting most of us can't do extraordinary things, but still wish we could. (I, for one, have always been a superstar trapped in a less than average body.) Yet, even if we could, that ability would not make us content. Having true friends does. Faith does. Good horses and good dogs do. Giving does. Love does.

Reminds me of my old friend, John Redwine, when I asked him about finding happiness. "The Lord meant for it to be easy to find, son," he said. "But we make things so complicated, turns out it's in a place most of us never think to look."

"Where's that?" I asked him.

"Right under our nose," he said. "He put it right under our nose."



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QUIZ CORNER

- 1. The chlorine demand at your wastewater plant suddenly increases significantly. This change is most likely due to
 - A. Nitrification beginning to occur at the plant
 - B. An industrial discharge upsetting the plant's pH balance
 - C. A sudden drop in ambient temperature
 - D. Excessive mixing in chlorine contact chamber
- 2. It is important to regularly measure and record influent wastewater temperatures because
 - A. Chemical dosages must be recalculated depending on the temperature
 - B. Biological processes will slow as the temperature decreases; this may require process adjustments
 - C. Flow measurement devices are very sensitive to temperature and must be recalibrated for different temperatures
 - D. Disinfection is no longer needed at temperatures below 10°C (50°F)
- What percentage of Oregon's water 3. withdrawals are used for crop irrigation?

۹.	85	D.	55
B.	80	E.	30

) .	80
-	75

- 4. What is the diameter of Portland's largest sewer pipe?
 - A. 8 feet C. 16 feet B. 12 feet D.20 feet
- 5. Pump Head Equation. With a pump centerline datum as zero, which is true: A. Static Head = Discharge Head - Suction Head
 - B. Discharge Head = Suction Head – Static Head
 - C. Suction Head = Static Head + Discharge Head
- 6. Total Dynamic Head, TDH, is what?
 - A. TDH = Discharge Head + Friction Head B. TDH = Static Head + Friction Head
 - C. TDH = Suction Head + Friction Head
- 7. If the height of the water level above centerline of a booster pump near the base of a standpipe reservoir is 32 ft, the booster pump is pumping from this reservoir to a higher level tank with a water surface 96 feet higher than the water level in the lower reservoir, and the friction head is estimated at 15 feet:

A. TDH = 79 ftC. TDH = 111 ft B. TDH = 143 ft

- 8. What is the most abundant metal in the Earth's crust? C. Copper
 - A. Aluminum
 - D. Magnesium B. Iron Ore

- 9. What color is a Polar Bear's skin?
 - C. Pink A. White
 - B. Black D. Yellow
- 10. What nation's 90-man army is the world's oldest, dating back to 1506?
 - A. Oslo C. Canterbury
 - B. Vatican City D. Salem
- 11. At what angle should most billiard shots be made to make the game easier?
 - A. 30 degrees
 - B. 20 degrees
 - C. 10 degrees
 - D. Angle is not a concern with proper English of the cue ball.
- 12. What is the carcinogen that leaches from plastic bottles?
 - A. Polyethylene terephthalate
 - B. Benzene
 - C. Formaldehyde
 - D. Asbestos
- 13. 13. There are ____ million plastic bottles dumped in landfills daily.
 - A. 5 C. 60
 - B. 33 D. 17

11-C' 12-Y' 13-C 1-Y' 5-B' 3-B' +-B' 2-Y' 9-B' 2-C' 8-Y' 9-B' 10-B' **SNAWERS**

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System O&M Manuals Required

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

Oregon Association of Water Utilities has prepared a full day class to assist operators in outlining an operations and maintenance manual per the Oregon Administrative Rule 333-061-0065 which requires each water system to develop an operations and maintenance manual.

This class will assist the water and wastewater system operator in outlining the specific points in developing the draft of the O&M manual. Step by step, each attendee will create their draft as it relates to their utility system during class. The e-file may then be completed back at the system office.

Class cost is \$150, or if you are unable to attend a class you may purchase a thumb drive with e-files for \$150.



To sign up for the October class, or to have a thumb drive mailed to you, contact your Association for further information.

UPCOMING OAWU CONFERENCES

Fall Water Operator's Conference November 6-8, 2012 • Cornelius, OR

14th Annual End of Year Operator's Conference

December 4-6, 2012 • Hood River, OR

35th Annual Management and Technical Conference March 4-8, 2013 • Sunriver, OR

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

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Contact Person	
Contact Person:	
Number of Hook-ups:	
Were you referred? By	whom
Type of System:	
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Membership Categor	ry Amount of Dues
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🗆 Associate Member	See schedule below
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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

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- Access to on-site training program
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- 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
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