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The Wyoming Connection is the official publication of The Wyoming Association of Rural Water Systems. It is published quarterly for distribution to member systems, water and wastewater Operations Specialists, water related agencies and companies, legislators and government officials.

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Articles, letters, and photos are welcome.

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The Association

Wyoming Association of Rural Water Systems is a non-profit association that provides on-site, one-on-one technical assistance and training to small municipalities under 10,000 population and all water and wastewater systems throughout the state. Equal Opportunity Provider.

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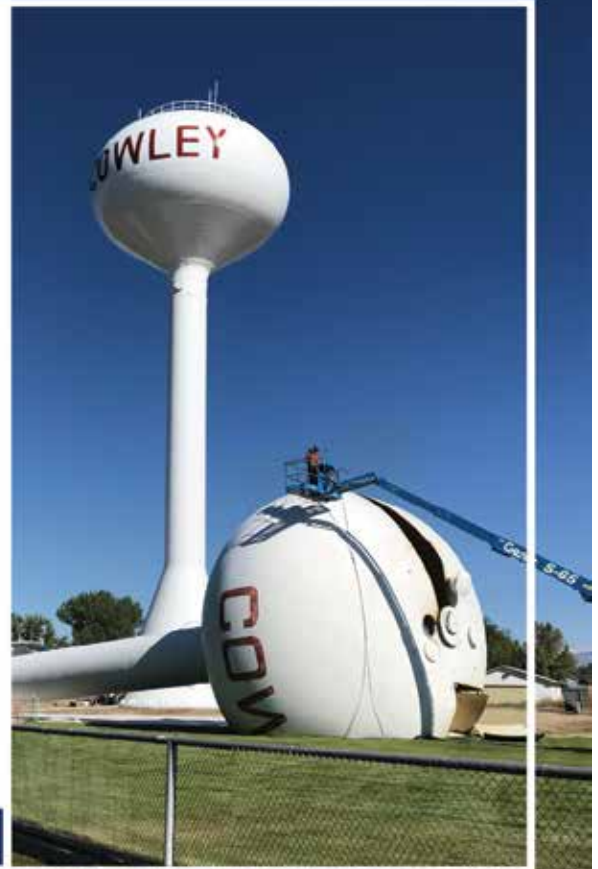
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2024 – Here it Comes, Ready or Not!!

As I write this, we are only weeks away from 2024. Many issues will come about in 2024: the lead line inventories must be filed by October 16; a possible new PFAS MCL may come into play; increased cyber attacks and security will continue to be forefront issues; drought appears to be ongoing in the west; an election year cycle will slow down many things; hopefully a new farm bill will be passed by Congress along with spending agreements to fund the government (at least until the end of this fiscal year) and then, if history is any barometer, 2024 leading into 2025 will get real funky!!!

Lead Line Inventories – the deadline looms. By our estimation in discussions and visits with community systems throughout Wyoming, over 60% of those systems have not begun to address conducting or completing the required service line inventory. Many tools are available, the bottom line is to pretend you’re a Nike commercial and “just do it”! Our old friends 120Water are still able to engage and help with community outreach as are many of the states engineering firms. The State is still negotiating with a group of Engineering Firms using state funding to assist systems with this task, and then there is the DIY approach.

There are several tools available from the EPA on templates for the required information you will need to certify and send to the EPA by the ever ticking deadline. The easy thing to do is to simply get one of the template spreadsheets and at least list all of your customers with addresses on the spreadsheet. Using whatever available information you can from your county clerks, assessors or city building records attempt to dial in the construction dates of the dwellings.

We know you may be somewhat in the clear if the construction took place after 1988 or so. Most of those would have used PVC or some other approved material as the lead ban took place in about 1984 and inventories would have been used up by 1988 hopefully.

Our field staff is pretty versed on the inventory project needs. Feel free to ask any of them for help in starting with the template. At the very least, if the state engineering project takes off, you will be able to give them a head start, or if you decide to use 120Water or your current engineering firm, you will be at least off and running towards the deadline.

PFAS MCL – By all indications, the EPA intends to issue the PFAS MCL most likely by end of 2023 or soon into 2024. There is still time to join the NRWA Cost Recovery Program, as well as the lawsuit against the manufacturers. Drop us an email and we can send you the links. At the very least,

WARWSDOKU

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The objective is to fill in the empty squares so each row, each column, and each 3x3 block contains the numbers 1-9 with no repeats.

you should probably consider drawing a sample and having it tested for the PFAS compounds so that you create a “baseline” result. If it is undetectable currently, that baseline could or will be used to determine “damage” in the event you move to a detectable amount in the future.

Cyber-attacks and security – do you know how to update your PLC’s and or change the passwords on your PLC’s or SCADA systems? If you don’t, you need to reach out to your IT people, the contractors who installed the units, the Cyber Infrastructure Security Agency (CISA) or WARWS for assistance. This simple task of changing passwords, updating vulnerabilities and or installing a “firewall” could be the difference in your system withstanding an attack or your customers going without water for an extended period of time.

Drought – While the winter of 22/23 helped some. I’m not a meteorologist, but looking around, it doesn’t appear that the drought is over to me. The Colorado River Basin seems to still be in a deficit as Lake Mead, Lake Powell and the other reservoirs are still pretty empty, and I don’t really see consumption decreasing.

As I understand the “drought” designation, it simply means that sufficient moisture exists in the soil to allow for planting and other vegetative activities. It certainly does not mean that the reservoirs are full!!

We really need to get a handle on our water production, water sales and water loss to gain a clear understanding of where we are with water availability. Has your system completed production logs and sent those to the State Engineer annually as probably required by your well permit? Have you reviewed your well permit to see if your production exceeds your gallons allowed? What steps should you take if you are exceeding your permit?

Feel free to reach out to any of our field staff for assistance with these questions, processes and answers as well as strategy to utilize the info for current needs or future growth.

Election 2024 – I think we all understand regardless of which side you come down on that Elections Matter!! During this election cycle many candidates will make a lot of noise and bluster about what they will do if elected. Generally, they will make wide ranging remarks that we “must cut spending, reign in government, cut taxes, cap taxes or whatever”. That is all fine and good, but as a voter, I want specifics.

If a candidate makes one of these grandiose statements that if he/she is elected, they will cut spending. Fine, where, what programs, positions, services do they intend to cut? Don’t let them off the hook. If they retort that they “need to get down there and tear into the budget and then cut”, throw the BS card at them. If they have not torn into the budget and understand all of the nuances of the budget to know specifically where spending can be cut, then they have no idea and do not deserve your vote. If they are going to run and ask for your vote, they should be informed about the issues they intend to champion. They will spend the next 2 years walking the capitol hallways wide eyed and wondering as they really don’t understand or have the understanding of government. In a word, they will be lost, easily manipulated by those who have a rudimentary understanding of the issues and will probably continue to walk us into bad legislation.

These are serious times, and we need people who can truly understand how all the pieces fit together and come up with good legislation that actually helps. 2024 is a budget session. I can’t wait to see how many bills are introduced that have no budgetary effect or make a bad situation worse! If you look at those bills, each and every one will cost us something. Many will require correction, clarification or “tweaking” in future sessions to correct or clarify their intent. Maybe if they took their time to really study the effects, not as many tweaks would be needed.

Bottom line, get involved, listen to what the candidates really say, ask questions, push for real answers not just sound bites, but most of all, VOTE.

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Sustainability or Capacity?

Believe it or not, these two words actually describe the same thing for a utility. For your system to be sustainable it must have capacity. If you want money from the state of Wyoming it is going to be incumbent upon you to demonstrate this capacity in your grant or loan application. So, what is capacity? It is the technical, financial and managerial ability to operate your system. Which is the most important? They all are. Think of a 3-legged stool. You need all three legs to make the stool stable enough to do what it was meant to do. It is the same for a water or wastewater system. This is how WY DEQ defines these three things:

- **Technical capability** - the physical infrastructure of the water system, including, but not limited to the source water adequacy, infrastructure adequacy, and technical knowledge. In other words, does your treatment system work the way it is supposed to? Are you providing the safest and cleanest water possible and required by law to your customers right now, and will you be able to in the future?
- **Managerial capability** - the management structure of the water system, including but not limited to ownership accountability, staffing and organization, and effective linkages. In simpler terms, do you have a capable and trained staff? Do you have an effective management structure?
- **Financial capability** - the financial resources of the water system, including but not limited to the revenue sufficiency, credit worthiness, and fiscal controls. Basically, does your system have a budget and enough revenue coming in to cover costs, repairs, and replacements

This is nothing new. Capacity development is a fundamental component of the 1996 Safe Drinking Water Act (SDWA) Amendments. Any system can and should assess their capacity regularly. It is a moving target. This is especially important for small systems, which is primarily what exists in Wyoming. From my experience, I believe Wyoming Systems do pretty darn well in technical capacity. We often fall short in managerial and financial capacity. The two are related.

If your decision makers are unwilling to take on the tough subject of rates and asset management, financial capacity will be negatively impacted. The lack of financial capacity will eventually feed back to having lack of technical capacity because there won't be the tools to operate your system effectively. It is only possible to operate using bungee cords

and chewing gum for so long before the whole thing melts down. There are forms on the Wyoming DEQ site that you can use as a check list for capacity.



There are many things that can be done to build capacity. If you are operating a water system, your source water is the most valuable asset you have. If you don't have good source water, you have nothing. If you have not done a source water protection plan, please consider doing one. Michelle Christopher our Source Water Protection Specialist can help you with that.

It is also really important to know how much water you are using or losing. If you haven't done a water audit, put it on your list. I know it is hard to believe after last winter, but we are still in drought. Water conservation is an important component of being sustainable. I know of systems in Wyoming that routinely lose 50% or more of the water they produce. Take the amount of water you are losing and multiply that by the amount you charge per thousand gallons and it will give you a rough idea of the amount of money that your system is flushing down a hole.

Encourage your decision makers to have water and wastewater rates reviewed. Rural Water can help you with the review. We do need some data from you though. Here is a list of what we will need:

- How many residential taps
- How many commercial taps
- Do you have different size meters
- How much water do you produce
- How much water do you sell
- What is your estimated water loss
- Expenses broken down by category for three years
- Revenues for the last three years
- Current rates
- Any planned Capital improvements

Rates should cover not only your basic operation and maintenance, but allow you to have adequate reserve accounts to cover depreciation, a year's worth of O& M, purchase the most critical or most expensive piece of equipment in your system and cover a year's worth of loan payments if needed. If you don't have currently have a loan you will want to be putting away funds that be could be used as match for grants or loans.

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While we are talking about expenses and finances, if you haven't had an energy audit, please consider doing so. Electricity is the second largest expense for most utilities next to personnel. Most utility companies will perform an audit free of charge. Their recommendations can save you big money and may be as simple as make sure your pumps don't come on during a peak demand time.

Do you have an Inventory of your system? It is the foundation for any asset management plan that you need to do. What condition are your assets in? What is the criticality of each asset in providing services to your customers? Find out where you can purchase and how long it would take and what it would cost to replace parts that are not in good repair. Those parts that are of high criticality and in poor repair are what you should be budgeting for in the coming year.

If you have not updated your emergency response plan, now is the time to do so. The plan should be based on an all-hazards vulnerability assessment. This should be more than a paper exercise. If you are going to take the time to do this, make it worthwhile. Get other people involved including your decision makers and your clerk. They may have information you don't, or you may be able to help them understand the system better, which can only bring about good things.

Are your decision makers and clerks trained? They need to be. Last year the Wyoming legislature passed a law which

requires minimal financial training for all elected councils/boards and Clerks. Wyoming Rural Water has been approved by the Wyoming Department of Audit to do this training. While this training is required, it is not the only training that your decision makers should consider. The best all around class for them in my opinion is a Capacity Development Workshop. You may operate the system, but your board or council are the owners. As owners of the system, they should understand how it operates. They also need to understand that your system needs to be operated as a business. That is exactly what the Capacity Development Workshop is designed to do.

I have done many of these workshops, and invariably at the end of them the attendees express that they wished they had had the information years ago. We will come to you. We will even come on weekends and evenings. The catch is we need everyone that has their hands on the system in attendance. That would be not only the operator, but clerk, decision makers, and anyone else that make decisions concerning the system. It also requires a time commitment of 4-6 hours. Consider it an investment.

Lastly, don't be overwhelmed. You do not have to do this all at once. Think of yourself as a mouse eating a very large piece of cheese. You can do this if you do it in manageable bites. We are here to help you do that. Call me or email me. Let's get a strategy going to build your systems capacity.



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Sherard Water Treatment Facility Power Generation Project

As Rocky Mountain Power awaits a decision from the Wyoming Public Service Commission on their latest rate increase of at least 30%, utilities are left to wonder, how can they adjust expenses to keep water and wastewater bills affordable for their customers? One option that may be considered is power generation.

Flowing water is used to generate electricity in hydroelectric dams, so why not a water treatment facility? The Sherard Water Treatment Facility in Cheyenne recently completed the installation of a hydroelectric generation facility. There is approximately 235 psi coming into the facility from Crystal Reservoir.

Crystal Reservoir is the final reservoir in an extensive water supply chain that provides drinking water to the City of Cheyenne. Two pipelines from the reservoir feed the water treatment plant. The pipes carry water approximately 12 miles with a drop of 525 feet. This elevation drop provides the pressure to spin the turbines that power the generator that produces electricity. Prior to the power generation facility, pressure reducing valves controlled the flows and pressures coming into the plant. The power generation facility can operate independently or in parallel with the pressure reducing valves.

The hydroelectric facility is designed for up to 16 million gallons per day (mgd) of flow. It is sized to operate efficiently for the majority of the year. For comparison, the WTP is designed for up to 32 mgd.

Summer peak use in the last 10 years was 21.7 mgd. Most of the year, all the flow coming into the plant will go through the hydroelectric generation facility. There will be times during peak summer use when flow will be split between the hydroelectric facility and the pressure reducing valves. Power generated is first used by the facility with extra energy sold back to the grid through a Power Purchasing Agreement with Black Hills Power. Because the primary goal of the facility is to provide water to the City of Cheyenne, power generation depends on water needs, rather than electrical needs.

The Cheyenne Board of Public Utilities (BOPU) was able to complete this project through a State Loan and Investment Board Drinking Water State Revolving Fund loan. The payments will be made from the money saved on power bills and the revenue from the sale of excess electricity. Over the life of the facility, the cumulative net income is expected to be around \$31 million.

A good place to start before undertaking a power generation project is the Wyoming Renewables Power Market webpage: <https://wyomingrenewables.org/renewable-technologies/hydroelectric/wyoming-small-hydropower-handbook/power-market/> The Wyoming Small Hydropower Handbook will walk you through many aspects to determine if power generation is feasible at your facility.

Important points to consider before embarking on a power generation project are location – is there enough flow coming into the treatment facility to allow for power generation. Is this flow consistent? Systems with less than 5-10 feet of head are generally considered unfeasible because insufficient power will be generated to justify the cost of installation and maintenance of the equipment.

Hydropower systems generating more than 25 kilowatts (kW) of power must have a purchasing agreement with the local power utility. This purchasing agreement defines the terms and conditions both the power utility and the hydroelectric producer must meet, as well as a purchasing rate for power sent back to the grid.

In addition to the power purchasing agreement, there are specific interconnection requirements that must be met. These are generally site specific and must be approved by a state electrical inspector. There may also be an interconnection study to ensure that the project will not have adverse effects on the power utility infrastructure or operations. The expense of the study is generally borne by the hydroelectric generation provider.

Beyond “small” scale hydropower generation, there is also micro-hydropower generation. These systems generally produce 25kW or less. They may be operated as an off-grid system where bringing in grid power is not feasible due to costs, terrain, or other factors, or as an on-grid system that utilizes net metering to send power back to the grid. Net metering basically means that instead of selling power back to the power utility, the power generated by the generation system is used onsite, and any remaining power is used to offset the power bill. The amounts are totaled at the end of the year.

Are you interested in learning more about how your water facility can generate electricity?

There are state and federal funding sources available. Wyoming Water Development Commission provides funding for feasibility studies and State Lands and Investments Board (SLIB), and the State Revolving Fund can provide subsidized loans, some with principal forgiveness.

A good first stop is your local UW Extension office to learn what resources and requirements are available in your area. The Natural Resources Conservation Service, Bureau of Reclamation Water SMART and USDA Rural Energy for America Program (REAP) are also sources of funding for hydropower projects.

A Note From Randy Townsend

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Tennessee Plowboy to Wyoming Cowboy!

I thought a catchy title to introduce myself might be a good start. Well, part of the title is true; I was raised on a farm in Tennessee and spent many an hour on the seat of a John Deere. I do enjoy trail riding, but have yet to get on a horse since leaving Tennessee. So much for the cowboy part! I do, however, love Wyoming, as it seems to be the ideal place for an outdoor enthusiast like me!

Like many of you, I didn't begin my career as a water or wastewater operator. I began my career in wildlife management working for several states. After many trying years of mainly law enforcement and people management, I returned to farming in Tennessee. A family friend suggested that I might be a good fit for the local surface water treatment plant that was considering hiring a new operator. As it turned out, I seemed a natural for this type of work. I readily learned the concepts of water treatment and after a couple of years became the first class 4 operator for my hometown facility. Unfortunately, staying indoors day in and day out had me hankering to do something different.

Let's fast forward to 2001 when I realized that being a water operator might be a good career. I began work in Smyrna, Tennessee at a 15 MGD state-of-the-art surface water facility. I found out quickly that a lot of changes had occurred since I last set foot in a water treatment plant. SCADA, computers, and automation had become the norm and many new regulations had been passed. Again, I met the challenges head on and soon felt at ease with my new position. However, 9/11/2001 changed a lot of things. Security awareness became the focus for all of us. We all received extensive training in bioterrorism, WMD 's, and HAZMAT protocols. This was definitely an eye opener for all of us.

After a couple of years in Smyrna, I felt I was ready to become a supervisor for a smaller facility in Portland TN. This was a new 3.0 MGD surface water treatment plant with technologically advanced equipment that the current staff could not operate. Luckily, my training in Smyrna had me prepared to undertake this venture. The town's public works director gave me the go ahead to hire new operators. I must say it was difficult to readily find personnel that I felt were qualified to become water operators. To make a long story short, I did find four great people to train. It took a couple of years to get everyone on board but I'm proud to say that all my new hires became class 4 operators.

Now it's 2005, I have trained staff and can take a vacation. I flew to Denver and drove into Wyoming for the first time.

The route over Togwotee pass to the Tetons, through Yellowstone National Park, across Chief Joseph scenic highway and over the Big Horn mountains was more than just breathtaking for this ol' country boy. Before I was back to Denver, I knew I wanted more of what Wyoming had to offer. When I returned to Tennessee, I began searching for an operator position with less responsibility and more days off. Luckily, I found just that with a small water district in northern Alabama not far from where I was raised. This facility was a 10 MGD GWUDI direct filtration plant that worked seven days on and seven days off. This would fit right in with my search for operator positions in the Rocky Mountain region.

After making several trips to Colorado, Idaho, and Wyoming, I found an opportunity to be chief operator in Ranchester WY. The last week of March 2007, I began my journey West in a 24-foot U-Haul. It took nearly a week to get there as a spring storm had dumped several feet of snow across northern Wyoming and the Dakotas. I got to Ranchester in time to help dig out from over 3 feet of snow. With the assistance of a retired former operator and a newly hired part-time operator, we managed to get things up and running in a short time. The summer of 2007 turned out to be a busy one. Even though being a chief operator kept me hopping, I found time to explore the Big Horn Mountains and many of the outdoor opportunities available. By chance, I met a young lady from Powell, Wyoming who accompanied me on my outdoor excursions. So, my story continues!

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In 2009, we took a position for Eagle River water district in Vail, CO. More money and moving to a larger system seemed like a golden opportunity. However, after only a few months in a very complex system with ever changing job duties and hours, we decided to move back to Wyoming.

The first part of 2010, we moved to Rock River, WY and I began my duties as chief operator there. This was a membrane filtration plant with a surface water intake in Rock Creek 17 miles upstream. At the end of this year, I decided to take time off from being a water operator.

It's now 2012 and I accept the public works director position in Kremmling, CO. My main duty was operating a 1 MGD conventional surface water package plant and distribution system which included 2 one-million-gallon storage tanks. After four years of water plant upgrades, line replacement and tank maintenance, I decided to accept a position in Yellowstone National Park.

I spent most of 2016 and 2017 as the DRC for the Old Faithful unit in the interior of Yellowstone. Most of my time was spent at the water treatment plant controlling high arsenic levels that occurred naturally in the source water. This was very challenging and yet rewarding as we gained insight on how to control the arsenic issues. Unfortunately, we decided to leave Yellowstone before the next Winter set in.

In late summer of 2018, I returned to the National Park Service at Glen Canyon on the north end of Lake Powell at

Bullfrog Marina in southern Utah. For the next three years, I was the DRC operator for a groundwater system with two storage tanks that used chlorine gas for disinfection. In 2021, I retired from the NPS and got to spend a little time back in the Big Horn mountains.

Even though I was retired, we remained at Lake Powell until this past summer when we moved to Loveland, CO. I became a field operator for a local environmental company and worked with several small rural water systems in northern Colorado.

As it turns out, the position of circuit rider for WARWS became available just as we were beginning our job search back in Wyoming. Fortunately, I was offered the position, and we will be moving to our home in Powell, Wyoming soon.

I've already been able to visit a few of you and discovered types of systems that I've not encountered before. With this in mind, I'll just say that we'll learn and figure solutions out together as the travels for your newest circuit rider begin.

THANKS to All for the WYOMING WELCOME!!!

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33rd Annual Spring Training Conference 2024

April 16th-19th, 2024

Ramkota Hotel and Conference Center, Casper, WY

Get yourself some capacity at this year's Spring Conference. Capacity is the 2024 word of the year, and if you want to enhance your chance of getting projects funded, it is important to not only develop capacity, but also to be able to document it. Come learn how to do both.

Pre-Conference will focus on Cyber Security, Best Financial Management Practices and Rate Setting, with an emphasis on Asset Management. WARWS is even bringing you the cyber security classes virtually. This track will be divided into 4 two-hour blocks. You may register for one or all of them. We will send you a link if you would like to attend virtually.

The regular conference will be jammed packed full of classes that will cover everything from hydrants to how to get your projects funded. We are also planning a field trip to Energy Labs, and some hands-on classes where you can get down and dirty.

As always, there will be lots of good food, good friends, and lots of information to exchange with your peers. We look forward to seeing you at Wyoming Rural Water's 33rd Annual Conference.

Board of Director Openings

Every year, the Wyoming Association of Rural Water Systems has Board of Director elections depending on the Region of the state of Wyoming for Board seats that are at the end of their term. These are 3 year terms and there are currently no term limits. Board members must be employees, elected officials or designated representatives of a voting member system (PWS's that are eligible for USDA RD funding typically serving populations under 10,000). The organization's By Laws define voting member as Non-profit public water, wastewater, associations, districts, municipalities and (or) other types of public utilities of any size with 10,000 or fewer population, engaged in the transportation, distribution and/or sale of public utility services in the rural areas of the State of Wyoming.

Board members provide oversight of and direction to the Executive Director on policy issues/items including budgetary, program, legislative and professional direction. Board members receive no direct compensation for serving. Board members are reimbursed for travel expenses to attend official association meetings, can attend in person conferences and training sessions at no cost including hotel and per diem. Board members can attend virtual training sessions at no cost.

For 2024, two region board seats are up for election. The Northwest region includes Park, Big Horn, Hot Springs and Washakie counties. The Northeast includes Sheridan, Johnson, Campbell, Crook and Weston counties.

Those interested can contact Mark Pepper, Executive Director for more information. A letter of interest must be received by March 31st to be included in Business Meeting materials distributed to voting member delegates. The Annual Business Meeting does entertain floor nominations for Board seats as well. Announcements for the Annual Business Meeting will be made during the first two weeks of April per the By Laws.

The Best Tasting Water in Wyoming

We invite every system attending conference to enter "The Best Tasting Water in Wyoming" contest. The winning system will be hosted (airfare, room, and meals, for one representative) in Washington D.C. at the National Rural Water Rally 2025 by the Wyoming Rural Water Executive Director and Wyoming's National Director. The delegation will meet with officials from the USDA Rural Development, USEPA and will visit with Wyoming's US Senators and Representative to discuss water issues facing systems in Wyoming. To enter, bring 1/2 gallon of your water, in glass and on ice to the registration booth when you check in.

Exhibit Hall

Set up can begin Tuesday 3-5pm. Official opening Wednesday at the 10am break. Tear down will be after the 3pm break on Thursday, or you can stay until the end, if you choose.



CONFERENCE REGISTRATION

33rd Annual Technical Conference

April 16th-19th, 2024

Ramkota Hotel and Conference Center, Casper WY

Name for Badge: _____ Daytime Phone: _____

Your Employer: _____ 5 Digit Operator ID# REQUIRED _____

Your Title or Position: _____ PWS#: _____

Billing Address: _____

City/State/Zip: _____

Bill my employer: _____ Pay with credit card: _____ E-mail confirmation to: _____

Personal address to receive our magazine: _____

Email to receive training registrations and other notifications: _____

I plan to attend only the Pre-Conference Cyber Security virtually on the 16th (No Fee) _____

I plan to attend only the Pre-Conference in-person on the 16th (No Fee) _____

FULL REGISTRATION April 16th - 19th, 2024

(Includes Pre-Conference, all classes, Exhibit Hall, meals and breaks, and **Certification processing**)

Member – Early Bird, payment included (By 3/15/24) \$395 _____

Member – After 3/15/24 \$445 _____

Non-Member Early Bird, including a new Individual Membership through 12/31/24..... \$520 _____

Non-Member after 3/15/24, including a new Individual Membership through 12/31/24..... \$570 _____

Decision Maker / Clerk \$150 _____

I plan to bring a water sample for the ‘Best Tasting Water in Wyoming’ contest (circle one) – YES NO

One-day only registrations

	Member	Non-member
Wednesday only: (classes, lunch, Exhibit Hall, Game Night)	\$250	\$275 = \$ _____
Thursday only: (classes, lunch, Exhibit Hall).....	\$225	\$250 = \$ _____
Friday only: (classes)	\$155	\$185 = \$ _____

Refund policy: No refunds after 3/15/24. Amount can be credited to a future event

Total \$ _____

If paying with a credit card, please complete the following:

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Return this form with payment to:

WARWS, PO Box 1750, Glenrock, WY 82637 (307) 436-8636
or Fax (307) 436-8441 or Register on-line: www.warws.com

Wyoming Association of Rural Water Systems
33rd Annual Training Conference – BOOTH REGISTRATION
April 16th - 19th, 2024 Ramkota Hotel and Conference Center, Casper, WY

Please print legibly or type:

Company Name: _____

Mailing Address: _____

City/State/Zip: _____

Telephone: _____ Fax: _____

Type of Product/Service: _____

Name(s) and emails of those attending: _____

Exhibit Hall – 8' x 8' space, 6' skirted table, pipe and drape, 2 chairs, wireless internet, meals for two. If you have more than 2 representatives, a fee of \$40 per representative will be charged.

1st, 2nd, 3rd request for booth # _____, _____, _____

Note: A few booths are numbered the same as the sleeping room right behind it. If you choose one of those booths, you must also take that sleeping room. Reserve the room by emailing Ashley Perrey aperrey@ramkotacasper.com.

ASSOCIATE MEMBER – EARLY BIRD REGISTRATION by 3/15/24:

Member Exhibit Hall ___ x \$475 _____

ASSOCIATE MEMBER – REGISTRATION after 3/15/24

Member Exhibit Hall ___ x \$625 _____

NON-MEMBERS – EARLY BIRD by 3/15/24 (Includes non-advertising membership through 12/31/24 @ \$375)

Non-Member Exhibit Hall ___ x \$850 _____

NON-MEMBER – REGISTRATION after 3/15/24 (Includes non-advertising membership through 12/31/24 @ \$375)

Non-Member Exhibit Hall ___ x \$1,000 _____

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Non-Member Exhibit Hall ___ x \$1,000 _____

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Game Night (Food and prizes): _____ x \$125 = _____

Meals for representatives _____ x \$ 40 = _____

Sponsorships packages available: email Mark Pepper – markp@warws.com

- Donations for door prizes will be accepted and appreciated **Total \$ _____**
- Refund Policy: No refunds after 3/15/24 (carry over to a future event)

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Billing Address: _____

Card Number: _____ Expiration date on card: _____

Host Hotel:

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Getting It Done

Once again, another year has gone flying by! This year seemed like the year of the never-ending winter. Snow from October left in May! Most lagoons in the northwest side of the state were still frozen over at the start of May. Most of the beautiful lakes around my area were also unfishable until near mid-May. As the snow receded, the corpses of all the dead deer and antelope dotted our landscape. Just getting up in the beautiful mountains was becoming possible. Now I love winter just as much as the next person, but enough was enough in 2023!

By the start of June, most of the lagoons were iced off and the microbiology were once again in full swing treating the wastewater. After the turnover and water temps started heating up most ponds were looking great, and the test results were looking good as the microbiology was getting back to normal. However, some lagoon systems had the same dark issues they always have. The pond starts off turning brown, and the sulfur smell steadily got worse as time passed by.

The cattails and weeds started taking over, as usual. Lab results for TSS, TDS, E-Coli, etc. go straight through the floor. As the norm, the phone always seems to start ringing. These site visits usually have several factors that seem to always come up. One look at the cells always shows the same issue, they have been neglected for years. They also seem to have the same common excuses for the reasons the ponds have been neglected. To name a few: we have no time, we have no money, we don't have enough help, we're passing most of the permit requirements, so why bother, we have so many other more important things the Mayor wants done, oh ya we're too busy. For the vast majority of small towns, they absolutely do have valid points of why their lagoons are in a state of shambles / disrepair. However, occasionally a couple of operators say enough is enough, and just gets it done!

I had a system that stood out this year doing just this very thing. I should have known after the way these operators vastly improved the water treatment side for their town. To start, the aeration system for the three cell lagoon is just about at the point of not functioning. To fix the issues is a work in progress, and of course that money question come back to show its ugly head.

The sludge profile that was done a couple of years ago, showed an average depth pushing over two feet in the first two cells. To combat this, the town incorporated the help of Biolyneus Pro Botic II . This has helped with breaking down the sludge blanket, and with the occasional hiccups the system tends to encounter occasionally. As Murphy's Law

did earlier this year. Seems one of the local shops thought it would be a good idea to get rid of some diesel/chemicals down a drain / sink in their shop. Once again, an illegal dump the town now must deal with and own. (Always be on the lookout for sudden changes in color, or smells) This in turn upset the first two cells, turning them a nice chalky brown instead of a nice shade of beautiful rich shade of green.

Here again, thanks to the operators being on the ball doing his daily checks was able to add a bigger dose of Biolyneus / run the aerators full time to get ahead of this problem. The cells recovered in a few days turning back to a beautiful green color with no more sulfur smell. This shows just how important always staying vigilant is, even when doing the most mundane jobs.

As to the most favorite nuisance to lagoon operators, the never-ending cattails, and/or overgrowth around our ponds. After several seasons of fighting them and trying to get them in check, enough was enough. Go big or just go home. The tried-and-true backhoe came out. So after exercising extreme caution, the mechanical removal of all the debris off the banks the cells they now look like a thing of beauty.

Next year some further dirt work will complete the landscaping of the ponds, making their project a sight to be proud of. This has not only improved the wind action, thus increasing the D.O of the ponds, but has also got rid of critical habitat that encourage the local critters to call the lagoons home. The ones that were still being pests refusing to be evicted, have died by hollow points. After all, ya got to have some fun at work! The decades of wind blow dirt being removed, has now increased the ponds capacity closer to the original designed plans. Adding the benefit of increased circulation when the aerators get back to their glory days next year.

This one example is one of many that all the great wastewater operators do around the state every year. My hope is that with time, the systems that have been neglected, for whatever reason, get a clue and step up their game.

This system does have a fourth cell that with more hard work, this will be operational at some point in the future. The town is also looking into upgrading some aging critical parts and adding some pretreatment. Implementing a plan using a yearly sludge profile to track the progress, and reduction of their sludge blanket. Hard work, a backhoe, a will to improve the quality of what goes into our receiving streams, and simple pride in your work goes a long way.

The most telling quote of our conversations was "Me and my family swim and eat the fish in that river". That sounds like a great bumper sticker for great wastewater operators, just saying. I'm giving a great big shout out to both operators at the Town of LaBarge for leading the way to getting things done! As always, be safe and enjoy the wonderful Wyoming winter fun we all enjoy!

Operator's Corner

Water Questions by Michelle Christopher:

1. True or false? Chlorinators should be located as far away as possible from the application (injection) point in case of leaks.
 - a. True
 - b. False
2. Floc passing the launderer weirs at the end of the sedimentation basin indicate:
 - a. Full sedimentation has occurred and any floc passing the weir is residual coagulant.
 - b. The sludge blanket is inadequate.
 - c. A process upset. The flows may be too high, sludge blanket is too deep or short circuiting is occurring.
 - d. A sludge removal cycle is occurring.
3. Air release valves should be installed:
 - a. At the bottom of the pipe
 - b. At the top of the pipe
 - c. Between 10 'o clock and 2 'o clock
 - d. At 90 degrees
4. pH of water is a critical factor in
 - a. Disinfection
 - b. Total Organic Carbon removal
 - c. Corrosion Control
 - d. All of the above
5. The following is a list of end of month reads for a totalizer meter:
 December – 37,589 MG
 January – 37,621 MG
 February – 37,698 MG
 March – 37,727 MG
 What is the average monthly flow in MG for the January – March quarter?
 - a. 138 MG
 - b. 106 MG
 - c. 46 MG
 - d. 113,406 MG



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--	--

1. Find the flow that occurred during the quarter.
2. Subtract the December end reading from the March end reading. $37,727 - 37,589 = 138$ MG
3. There's 3 months in the quarter, divide 138 by 3 . $138/3 = 46$ MG

Answers

1. A
2. C
3. B
4. D
5. C



Scrawny Girl's Christmas Caramels

by Michelle Christopher

Christmas is coming. Or rather, it will have come and gone by the time this article is published. There are many traditions of the Holiday Season that I try to avoid (namely, anything that has to do with excessive amounts of people), but one tradition I always look forward to is Baking Day.

Every year, I am blessed to get together with my mom, mother-in-law and as many Grans, Aunties and Nieces as we can wrangle in the time of Too Much Scheduling to bake Christmas goodies. It's a sugar cyclone of a day, with new treats to try, as well as those that have become cherished traditions. I know that Trudy, my mother-in-law, will set up shop at the far end of the table to begin decorating the most fantastic cookies with more icing, sprinkles, and

edible glitter than most people even know exists. My mom will be making her family-famous toffee and my personal favorite, Jello popcorn. There is a reigning controversy amongst family members whether green or red is the best, but whoever is voting for green is wrong, because RED. ALWAYS. WINS. This leaves me space to set up shop at the stove making caramels. Caramels are one of those nostalgic "It's not Christmas without them" sort of candies. I honestly can't remember a year without them. One year, we lost the recipe and ended up calling the family of Esther Perryman, a woman my mother boarded with in college (and the originator of the recipe) to get it. Crises averted! I share this recipe with you, hoping that even if you never try the caramels, that you make holiday traditions with those you love.

Caramel Nut Candy

½ lb margarine (I do use butter. Sorry, Esther)

1 c brown sugar

1 c white sirup (this is corn syrup)

1 c sweetened condensed milk (Note, this IS NOT 1 CAN.

1 cup, and somehow the good folks at Eagle-Borden still insist on making cans that are like 1 ¼ cups. Weird.)

1 tsp vanilla

1 cup chopped nuts (This is purely optional. Walnuts seem to be traditional, but pecans are really nice, and you can just leave them out and the candy will still be fantastic.)

In a large saucepan, melt the butter/margarine and add the sugar and syrup. Add milk slowly and bring to a rolling boil, stirring constantly. *For the love of all candy making, please make sure you're using a heat proof spoon or spatula. Melting sugar gets super-hot and non-heat proof utensils will melt and leave little bits of spoon in your candy. Such a tragedy.* The recipe says to boil 7 minutes, but that has left me with both caramels that required a spoon to eat them and those that were so hard they broke teeth. So, you could use a candy thermometer and heat the mixture to 240-245 degrees Fahrenheit, but I prefer the water test. To do a water test on candy, have a small bowl of cool water handy. When you think the mixture is close to the appropriate temperature, drop a small amount into the water. This will cool the mixture quickly, and you can try to roll it into a ball. If it is too soft, and it doesn't maintain a ball shape, cook it a bit longer. If it maintains the ball shape but is still soft enough to squash, take it immediately off the heat. If it cracks when it hits water, grab some popcorn and make caramel popcorn. After the pot is removed from the stove, stir in vanilla and chopped nuts, if you're using them. Pour the mixture into a greased 9x13 inch pan and allow to cool.

The next part is the hard part. Wrapping the caramels. Once the caramel has been cut into ¾" squares, it needs to be wrapped, or it just sticks back together. So, enlist any willing and able kitchen help (or unwilling, it really doesn't matter at this point!) and wrap each square individually in plastic wrap. Waxed paper is traditional, but honestly, I don't think it works as well. These last about a week on the counter, or a month in the freezer if nobody knows they're there. Happy Christmas!

Our Western Heritage

Cooking with Gas!

by Kathy Weinsaft

If you are reading this, it is winter 22024. I have never minded winter. I live in Wyoming. Winter of 2023 almost broke me though. What got me through was spending those days and nights that I could not even get my door open in my cozy kitchen cooking away. It kept the house warm when it was 40 below and house. It was better than any Scentsy I have ever used. I have picked up these recipes during the last quarter of a century that I have been here. There roots are Wyoming deep.

Wyoming Stew

1 lb. cubed stew meat
14.5 oz can chicken broth
10.75 can cream of chicken soup
1 envelop dry onion soup mix
1 sweet potato cubed
1 package crescent rolls

Heat a cast-iron skillet over medium-high heat. Brown the beef cubes. Drain off any excess juice. Add cubed sweet potato. In a small bowl, mix chicken broth, cream of chicken soup and onion soup mix. Pour over meat and sweet potato. Reduce heat to low and simmer for 45 minutes. Preheat the oven to 350 degrees. Add the frozen vegetables to the skillet, and simmer for ten more minutes. Unroll crescent dough and arrange to cover the top of the pan (like a pie). Bake for 10 to 15 minutes until the top is brown. If you are using wild game add a couple of tablespoons of butter and 1 tablespoon of lemon before you put the mixture in the oven.

Wyoming White Bean Soup

3 cloves of garlic chopped
Enough butter to brown the garlic
½ teaspoon cumin
Smoked meat of your choice

In a large soup pot throw in some butter and garlic until you get a get whiff of it. Drain the beans and add to pot along with the cumin. Mix it together and add the chicken broth. Bring it to a simmer and add as much of the smoked meat as you like. The longer it simmers the better it tastes.

Chugwater Elk Chili


Does it get any more Wyoming than this? I love Chugwater Chili. I even got to be a judge at the Chugwater Chili cook-off one year and that is a highlight of my life!
2lb Ground Elk
3 tablespoons of Chugwater Chili spice mix

1 15 oz can tomato sauce
1 can water
2 15 oz cans of pinto beans

Brown the ground elk and break it up as it cooks. Elk is very lean, so don't over cook it. It only takes about five minutes or so. Add the tomato sauce and water and bring the chili to a gentle boil. Add the pinto beans and simmer for another 20 minutes. Ladle it up and garnish with your favorite toppings.

These recipes will help you make it through a Wyoming winter in fine shape. Now get to your kitchen, turn on that gas stove and get to cooking.

It is, after all, part of our western heritage



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Asset Management and Emergency Response

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Public Works (PW) infrastructure forms the backbone of our communities, providing essential services to our ratepayers. During emergencies, the seamless functioning of these assets becomes paramount for quality of life, public safety, and rapid response. Enterprise Asset Management (EAM) plays a pivotal role in ensuring the resilience and effectiveness of PW during crises. EAM involves the systematic planning, acquisition, operation, maintenance, and disposal of various types of physical assets to achieve organizational objectives effectively and efficiently. Assets encompass a wide range of structures, facilities, equipment, and technologies inventoried in GIS, CAD, SCADA that contribute to the delivery of essential services to the community. Below are few learnings from our numerous implementations across USA to accentuate the importance of EAM tools, and its criticality in emergency response.

EAM in PW:

- Resource Optimization:

Efficient EAM helps PW allocate resources judiciously. By understanding the condition and performance of assets and using AI and IoT tools, agencies can prioritize maintenance and replacement activities, ensuring that critical infrastructure remains in optimal condition.

- Risk Mitigation/ Predictive Maintenance:

EAM enables the identification of potential risks and failures in PW systems. By assessing the condition of assets and understanding their life cycles, agencies can proactively address issues before they escalate or fail, reducing the risk of failures during emergencies.

- Cost Savings/ Reserves Building:

Strategic EAM leads to cost savings by preventing unplanned downtime and reducing emergency repairs. Regular maintenance and timely replacement of aging assets can prevent costly emergency situations, contributing to long-term fiscal responsibility.

- Resilience Building:

Resilient PW infrastructure is crucial for effective emergency response. EAM ensures that critical assets are designed, operated, and maintained with resilience and sustenance in mind, equipping them to withstand natural disasters, accidents, or other unforeseen events.

EAM in Emergency Response (ER):

- Rapid Decision-Making:

Time is of the essence during emergencies. EAM provides real-time data on the condition and location of assets, enabling quick decision-making for PW, first responders, and ER teams to allocate resources efficiently and respond promptly.

- Prioritizing Critical Assets:

EAM allows PW to identify and prioritize critical assets that are essential for ER e.g. in the event of a natural disaster, water and wastewater networks may be prioritized for inspection and repair for upkeep of critical life sustaining services.

- Data-Driven Planning:

Effective ER requires accurate and up-to-date information. EAM provides a wealth of data that is utilized for scenario planning, risk assessment, and resource allocation. This data-driven approach enhances the preparedness of PW for ER.

- Coordination and Collaboration:


EAM fosters cross-collaboration between different agencies involved in ER. By sharing asset related information, organizations can coordinate efforts more effectively, ensuring a cohesive and streamlined response.

The importance of EAM in PW and ER cannot be overstated. Strategic EAM enhances critical infrastructure resiliency, optimizes costs and resource allocations, and facilitates rapid decision-making during ER. As communities face increasingly complex challenges for budget and growth over time, investing in robust EAM systems is essential to ensure the safety, well-being, and efficient functioning of our societies leading to sustainable services and happy ratepayers.

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