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WINTER 2022

THE OFFICIAL PUBLICATION OF THE NEVADA RURAL WATER ASSOCIATION

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Our Mission:
 "To provide the best available technology, resources, support, assistance and training to our members serving Nevada Communities."

Message from the Executive Director

Bob Foerster, NvRWA Executive Director

Mark your calendar and make plans to attend our Annual Technical and Training Conference scheduled for March 22, 23, 24, with water certification exams on Friday the 25th. We are pleased to announce that scholarship funding is available for registration, lodging and travel/per diem meeting federal guidelines. This scholarship is part of the State Revolving Fund set-aside monies, and is targeted specifically to help small systems, especially where there are water quality problems or infrastructure needs. Please look for registration materials and scholarship applications in early January. Please remember to send in your nominations for **water and wastewater operator / administrative person / manager of the year awards**.

With the conference cancellations and cutbacks from the pandemic, and our other issues, NvRWA is going through a sort of reboot. We are confident that our professional staff will always be there to meet your

technical / managerial / financial assistance needs. We are currently asking water and wastewater systems to support NvRWA by renewing membership or joining the Association. At the same time, our membership cycle is being shifted to later in the year, so that we can spread out some of the end-of-year workload. The details are explained in a letter that will be attached to your systems' invoice. We truly need and appreciate your membership support!

Look for conference news on our updated web site and in your e-mail. We keep a database of contact information and it is important that you keep your email and other information current with NvRWA.

We all look forward to seeing you at the Annual Conference. Please do your part to keep Nevada Rural Water strong by using our services and going forward with membership!

Message from the New Executive Director

Kevin Bauman, NvRWA Executive Director

It's time for new adventures. Life has been a challenge over the last couple years and that makes it interesting. One of my reasons for being here, is to acknowledge those of you who keep our communities civilized. I heard from the beginning of this Pandemic that the best line of defense was to WASH OUR HANDS, FREQUENTLY! How does this happen? First, we usually need power. There are utility workers who never stopped going to work to make sure the lights stay on (AND our pumps keep pumping). Then there are the water and wastewater system operators. Open the faucets and out comes clean water to wash away those pesky virus bugs. Our wastewater teams collect, contain, and deactivate those little pests constantly. EACH one of you is my hero! THANK YOU!!!

Who am I? Well, as a youngster, I grew up in Oklahoma, you know, tornado alley. Yes, in the land of softball size hail. I did wrangle a tornado or two, and, see a few intense storms. I was the son of a glass cutter. My family were Journeyman in the field of cutting glass. Automation in the industry cut my chances of following the family business. Dad went into welding and later, route sales. Hard work with rough working conditions, both. When I was having my 13th birthday, I was asked what I wanted to do for a living. My response was "I want a job where I push buttons and watch what happens". Fast forward a few years I ended up talking to a Navy recruiter. I had the intention of going in for four years as a cook (I was not wanting to be hungry at work). I ended up in the nuclear power program on board submarines. I worked ten years as an enlisted, submarine qualified, nuclear power trained electrician. Well, I thought I was going to see the sea. At least I was in it... After ten years, enlisted, I volunteered for the new downsizing mission, the cold war was over. Russia was our new ally. I followed this by getting hired at a 40mgd conventional drinking water treatment plant in Southern California. Here I took the opportunity to learn to be the backup water quality laboratory operator and a plant operator to back up the shift working operators for when they were sick or taking vacation (usually on the crowded day shifts). One day, ten years into this, it took me three hours to get to work and almost as long to get home. My wife suggested we go back to Hawaii since we both met there when we were stationed there. At this time, I learned that Maui County was reimbursing people to move there to work at the water treatment division. I was a plant operator on the west side for four years when I was asked to apply and became the worlds first Drinking Water Circuit Rider in Hawaii. It was the work of a lifetime. I thought it was going to be that I worked myself out of a job. That was about eighteen years ago.

I learned and loved my work. Technical assistance, training, and mentoring people to improve their own technical, managerial, and financial capacity was very rewarding. Building relations, helping people build their confidence, and being an influence to help build reliability in communities water systems just makes a person feel better. We do important work and help communities get into better shape with the utility services. Can you say this is not important?

It makes me feel lucky that we are probably coming out of this pandemic, the government is noting that the country's infrastructure needs serious attention and working on supplying the tools we need



to upgrade (read this as lots of money)! It is looking like we have a good chance of growing our organization. It is my objective to rely on the staff to take on treating their work like it is their own business. We operate the projects with a fixed budget. I hope you each take it as a personal challenge to be achieving the required deliverables and within budget in doing so. Please remember you are using taxpayer dollars for providing a community service. I hope you will take it as a personal challenge to do the best you can!

In my beginning paragraph, I mentioned the electrical portion of my work experience. Have you noticed the trend in cars? Are YOU looking at an electric vehicle? What about the Paradise California Fire? Now there is a new policy; let's shut down the power grid when it gets breezy. Is this idea is possibly spreading to other states. What happened in Texas when it got cold last winter? Ever heard of rolling blackouts in warm, peak electrical demand times? Are the weather trends becoming milder? These thoughts seem to direct us to put more emphasis on the solar and backup power projects for our clients.

It appears there is always emerging contaminants. Are any of you Chemistry fans?

The incident in Lemoore California. We work with powerful forces; our operators need a constant reminder to be aware and manage risks. They need us. We are a planned interruption to routine operations. This helps give us a renewed critical look at our work. This hopefully causes a break in the chain of events that causes major catastrophic failure.

I do see that we all have a bright future ahead. Six months after I started working in the industry, I really was questioning why had I not heard of this work before? (Remember my 13th birthday career goal? NAILED IT!). There are many aspects to this work. There are also many benefits to a career in our industry. It seems that people do not stop their water and wastewater service during recessions. Once a person is in there is a good chance that they will keep working through recessions and pandemics. People rely on us through disasters and good times too. It is a rewarding career. I see more and more opportunity for each of us to promote this good work. Let's do our part to make others aware of the value of water and wastewater services and the people who make and keep life civilized. Please, unleash your inner advocate and increase awareness, opportunity, and value of our industries. I hope you agree we each have a very exciting and valuable future.

Max's Wastewater Corner:

Max Sosa, NvRWA Wastewater Technician

1) What chemical is used to identify a Chlorine leak?

- a) Sulfuric acid
- b) Sulfur dioxide
- c) Sodium hydroxide
- d) Ammonia

2) Sulfur dioxide and Sodium bisulfate can be used to dechlorinate.

- a) True
- b) False

3) How much alkalinity is required to convert one pound of Ammonia Nitrogen during Nitrification?

- a) 7.14 lbs.
- b) 7.48 lbs.
- c) 8.34 lbs.
- d) 4.57 lbs.

4) What is a wastewater shock load?

- a) A heavy truck entering the plant.
- b) A wastewater process that uses electricity to stimulate the bacteria.
- c) A much stronger BOD concentration than normal in the wastewater plant influent.
- d) An unexpected bump.

5) If there is a chlorine gas leak the gas will most likely be found near the ceiling.

- a) True
- b) False

See page 18 for answers

Emergency Response Plans

By Michael Boney, NvRWA Drinking Water Technical Assistance

As the year 2021 ends, all systems have been a part to changing health, regulations, and plans. Earlier in the year and part of 2020, all water systems, depending on population, were required to submit a certification form to the USEPA verifying completion of the Risk and Resilience Assessment, RRA. The final date for small systems, a population of 3,301 to 49,999 was June 30, 2021. As a condition of the RRA, each system, with a population of 3,301 or more, is required to submit an Emergency Response Plan, ERP, modelled from the RRA no later than six months after the certified completion of the RRA.

The follow material will discuss the ERP required by the USEPA. This ERP is NOT the same as the ERP required by the regulatory authorities in Nevada. The construction of the USEPA ERP follows the needs and identified shortfalls for the system from the RRA. Some examples of issues that may have been shown in the RRA could include a lack of a secondary power source, a lack of firewall protection for SCADA, too many internal systems tied into the same mainframe, or a lack of manual operation over SCADA control.

The ERP was originally designed to apply to the drinking water system. In August 2021, the USEPA put out instructions for a template for the wastewater systems. These documents will contain sensitive information. The security of the information is of the utmost importance, however, accessibility to the information is required when it is needed.

The USEPA has established requirements and instructions for the RRA and both ERP templates that can be found through this link <https://www.epa.gov/waterresilience/awia-section-2013>.

AWIA Section 2013 Certification Requirements

Community water systems serving populations greater than 3,300 must certify to U.S. EPA that they have completed an ERP that incorporates findings of the risk and resilience assessment conducted under AWIA Section 2013(a) and meets the criteria outlined under AWIA Section 2013(b). U.S. EPA strongly recommends you electronically submit your community water system's ERP certification statement by clicking the link below: <https://www.epa.gov/waterresilience/how-certify-your-risk-and-resilience-assessment-or-emergency-response-plan>

The following link directs you to the instructions and template for the drinking water, DW, system side. https://www.epa.gov/sites/default/files/2019-07/documents/190712-awia_erp_template_instructions_kab_508c_v6.pdf?VersionId=qNcn8X_2.554jehm.WgwRkpmQ0nSwlmZ.

Wastewater, WW, utilities are encouraged to complete a RRA for the WW infrastructure and system in a similar way as the drinking water RRA was completed. The system should then complete an ERP that compliments the RRA for the WW. Instructions for the WW ERP can be found at the following link: <https://www.epa.gov/system/files/documents/2021-08/ww-erp-template-instructions.pdf>.

The ERP documents for the DW and WW should be constructed in a 6 | Water Logged | Winter 2021



document that is easy to navigate.

No matter which ERP is being discussed most of the construction is similar. There are a few distinct category differences but the majority is similar. The system should not use the DW ERP as the WW ERP.

When some of the systems were completing their RRA, they may have caught some issues with the computer systems or SCADA. Let's go through a 'table-top exercise.'

Here is an example of a system with a brook, that runs through the middle of town, populated with fish, frogs, and other wildlife: ABC Water and Wastewater Utilities has 45 connections and a population of 65 people. The utility has two 100,000-gallon storage tanks, two groundwater wells, a water treatment plant with ferric hydroxide, to treat water with 20 µg/L of arsenic, and wastewater lagoons that treat a flow of 15,000-gallons per day. The utility employees a general manager, named Harold, two office personnel, and two water/wastewater operators named Bill and Mark.

Mark resigned under good conditions and moved to a separate town 30-miles away. A new, equally, certified operator, call her Sam, was hired at the same pay rate as Mark. Mark and Sam were friends on social media. Sam posted her wage on social media and it was seen by Mark.

The system uses 12.5% undiluted liquid sodium hypochlorite as a disinfectant. The stroke and frequency settings controlled by SCADA depending on the water flow. A target residual is programmed into the master SCADA computer with low and high levels to

control residual levels. SCADA alarms can be acknowledged on the operators' personal phone.

After two months of time have passed, Sam was picking up a work order at the office. She noticed that the chlorine residual, after treatment, on the office SCADA computer was at 6.0 mg/L. Sam looked at the upper and lower programmed limits for the residual. The lower limit was not changed, but the upper limit was changed to 8 mg/L. The office computer is a slave computer and programming adjustments can't be done at the office.

An alarm was supposed to notify the operators when the residual fell outside the low or high limits. The alarm was turned off. The only way to change the limits is at the master computer in the water treatment building. Sam notified Harold and Bill. Sam met Bill at the water treatment plant. The upper limit was changed back to 1.5 mg/L and the lower limit left alone at 0.8 mg/L.

Harold arrived at the plant a few minutes later and discussed the issue with the operators.

The above example is a working assignment for all. Answer the following questions that pertain to the ERP that some water system could run into.

1. After changing the limits of the chemical pump back to normal values, what are the next steps facing the water system?
2. After the high chlorine residual was found to have only affected 500' of distribution pipe and eight residences, what are the next steps?
3. Harold called in the SCADA tech to determine who adjusted the residual limits. Going forward from this incident, what protocols does the system need to adopt to keep this from occurring again.
4. Suppose the water system changed the system padlocks after Mark resigned. The above incident still happened; did you place all of the protocols in the answers for Question #3? Now make the gated entries by means of passcode. What else needs done?
5. Suppose the treatment plant has a concrete walkway to the doors and dirt area everywhere else around the building. What can the system do to help show trespassing if all of the proper protocols were adhered to but entry was made through a window?

Please keep the answers to the questions until our Spring 2022 issue comes out. At that point, we can compare answers. Incidents like the above and many others can help strengthen the system ERP.

Think about cybersecurity as a part of the ERP. This should be in the ERP. Questionable emails are sent out all of the time. If any one of these are opened at work, the work computers and SCADA can be infected if there is not an appropriate firewall. A customer that wants public information uploaded to a flash drive should trigger questioning immediately.

NvRWA is happy to assist utilities with the ERP for the water and wastewater. Give us a call when you are ready. The wastewater ERP does not have certification requirements, however, remember to certify the DW ERP to the USEPA either 6-months after the RRA or by December 31, 2021, whichever is sooner.

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Water and Its Uses: The Need for Real Conservation

By Joe Mathein, NWWA Technical Assistance and Training Specialist

So, the obvious question is how are we doing now?

The question should be easy to answer but... We are at the mercy of politically driven leaders. So, When we ask, we get the double talk that is evasive, "I did not say we were in a drought, it is merely a reduction of allotment." What does that mean? It means that our allotment from Lake Mead has been reduced because the levels in Lake Mead are plummeting downward! A recent article from News3Live presented the situation as clearly as I have seen lately. We are about 8 feet away from Federal Authorities triggering shortages to all the diverters using the lake's water. And of course, Nevada is the smallest of the diverters, so we know how that works when it's time to claim your share of the reduced allotment from Lake Mead.

Even though Southern Nevada Water Authority is the main water agency in Nevada we still have to compete with Arizona's water authorities, and the real water empire, the Metropolitan Water District of California. The MWD is an enormous entity that controls water up and down the entire state of California with relatively unlimited financial resources. MWD also wins the population argument that SNWA will be using when they raid Pahrump's aquifer. Whoops, you mean you didn't know? Yes, that's right. Clark county boundaries extend into the Pahrump Valley Aquifer. And all those small lots that have been sold and had their water entitlements reduced to true up the paper aquifer will be transferred or taken by Las Vegas because of their burgeoning population. The authorities have determined that the lots in Pahrump were originally sold with 2.5 acre feet of water entitlement. So, when those lots get sold they are reduced by almost half. They declared that if they don't reduce those entitlements and all those lots used their allotments the aquifer would not be able to support the demand because the Pahrump Valley aquifer is in overdraft. But, if Las Vegas needs more water.....hmmm.

So, if the water agencies are mandating conservation why aren't we saving water and saving Lake Mead from drying up? Well, it isn't drying up entirely... not just yet. But where is all the water that we have all been conserving? The leadership has mandated residential conservation while others are allowed to continue to build tens of thousands of houses. This

is because they are demonstrating sustainability of the water supply by mandating conservation in the residential areas....and then of course there is that aquifer just inside the boundary of Clark County.

"Water shortage announcement expected Monday for Lake Mead"

"LAS VEGAS (KSNV) – Federal authorities are expected to declare a water shortage for Lake Mead Monday, which would trim Nevada's allocation of water in 2022.

A shortage gets triggered if the lake is expected to sit below **1,075** feet on January 1, 2022. As of Wednesday morning (8-11-2021), the lake sits at 1,067.93 feet.

The shortage has been anticipated as Lake Mead's water level continues to drop."

Paraphrased from: <https://news3lv.com/news/local/water-shortage-announcement-expected-monday-for-lake-mead>

'The U.S. Bureau of Reclamation announced the first shortage declaration for Lake Mead and the lower Colorado River Basin in its history, triggering cuts to individual states' water allocations beginning in January.'

<https://thehill.com/policy/energy-environment/568075-federal-government-announces-first-ever-water-shortage-in-lake-mead>

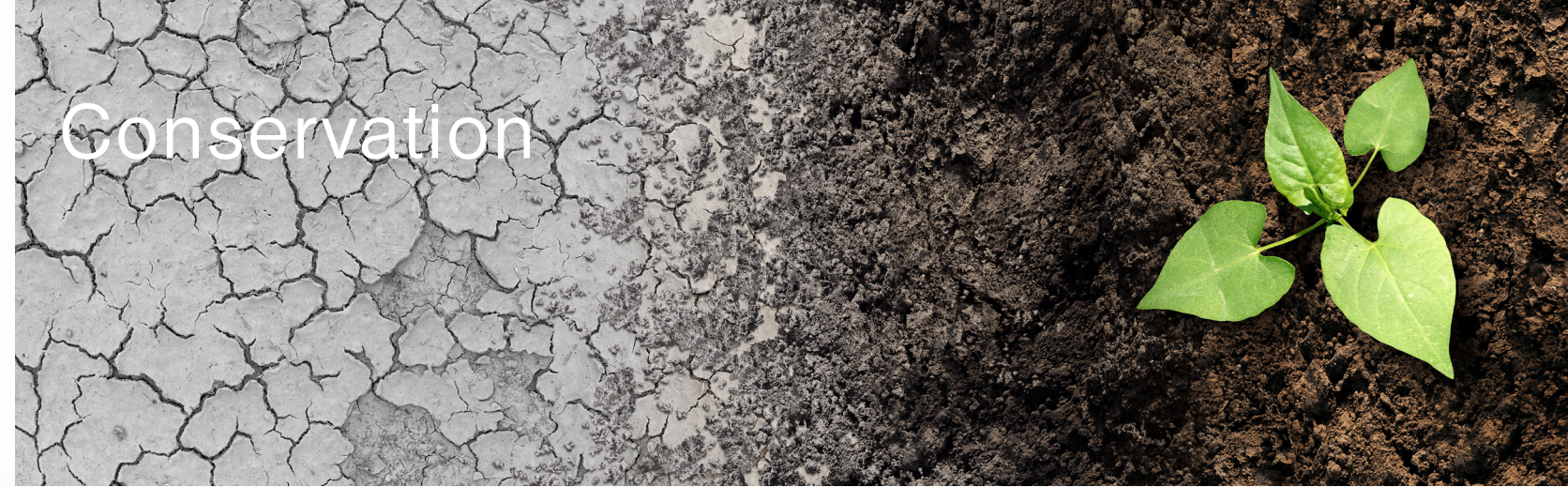
So, when we start to think about how much water we are conserving in our residential, or domestic use, we need to look at a bigger picture of how the fresh water in Nevada is used.

What amounts are used for agriculture, livestock, mining, and our homes? There is a report from the United States Geological Survey from 2015 that gives us some broad categories of use so we can get an idea of where the water is used and how much is used.

Nevada 2015 Water Withdrawals by category in Million Gallons per Day (MGD)

Public supply	Domestic	Irrigation	Livestock	Aquaculture	Industrial	Mining	Thermoelectric Power
531	35.8	2,070	4.94	34.0	5.71	206.3	79.63
12%	1%	37%	1%	2%	5%	1%	41%

<https://pubs.usgs.gov/circ/1441/circ1441.pdf>



Why isn't the data more current? That's a good question and I believe that with the census completed they may be able to update their data. Nonetheless, the data from 2015 hasn't changed by a remarkable amount. The categories are still within the same levels of use. Now the obvious question is how much water can be saved from a category with 1 % of the total use? That is what the USGS has determined domestic use is as part of the whole of freshwater use. Did it suddenly change in the past 6 years? I don't think so, except there are more homes using water from the unchallenged building spree across the state. Well, I don't mean across the state, just certain counties.

Who is Going to Save Our Water?

Well, it probably isn't the same people allowing the rampant growth and ignoring what is going on around them. Why is that? Shouldn't they be the ones who recognize that over building puts debilitating stress on our water supply. There are no stewardship principles guiding decisions for the future of our state's most precious resource. If we are to salvage a dying resource we must change the culture of our society. Our water resources are that dying resource and it's not just Nevada. The whole of the West is in the grips of a drought. In fact, global communities as a whole are experiencing the same problems. Why can't we as a society recognize the future by looking at the present?

"In July, the number of dry wells registered in Klamath County was at 84. A month later, that number has climbed to 185 as wells from the California state line all the way to Crescent and La Pine are getting low and going dry."

Posted Aug 10, 2021

More Klamath Basin wells go dry as groundwater decline persists - oregonlive.com

As we can see it not old news, these are current events having disastrous effects on ours and neighboring communities. Is there a belief that it won't happen here? There are many studies that are pointing to the same outcome, a drought that will be prolonged and we are not near the end of it. If you want to visit another case study by Alvin Chang, then check out the link about tree rings and what their predictive history is telling us about today.

<https://www.theguardian.com/us-news/ng-interactive/2021/jun/17/tree-rings-america-megadrought-visual>

As you can see it is not fake news or bad science. We need for a change of culture in our society. But can we be part of that change for the better? It is okay to mandate conservation on residential populations because it is good for the whole of our communities. It is the back side of business that is destroying any stewardship and actual conservation. Allowing the number of homes and business buildings to be built without demonstrating the conservation savings is reprehensible. I am confident the spin doctors in our water agencies and legislature can manipulate numbers to show the water saved on paper. I'm confident they have bound and laminated studies that show sustainability for years. But, just take a drive, look out the window at Lake Mead Marina and tell me, has the level of Lake Mead stopped dropping? Has the level of Lake Mead increased from the years of conserving? We know the answers. Why don't our leaders? As a society we need to demand accountability before we're stricken with severe water restrictions. We vote to send people to represent our interests into the various levels of government. It is time to think about what is in our communities' best interest before it's too late. There are a wide range of categories of water use that can be put to mandatory conservation as our residential neighborhoods have been. The savings are critical to the sustainability of our most precious resource. However, if the greed driven building sprawl continues we will have conserved for only the benefit of monetary profit for the very few. Please don't expect a radical change because the studies and reports are all saying the same thing. Every industry, every builder, every civic leader who is talking about the health of our economy or financial viability of our region has already forsaken our future. The time is now, the moment is passing us by, we need to change the culture of greed to a culture of sincere conservation. Not just using conservation to manipulate a sustainability requirement for building more homes, but to actually demonstrate real sustainable stewardship of our most precious resource.

As a closing thought, take a look at the Nevada U.S. Drought Monitor from August 12, 2021. There is no place in Nevada that is not less than a moderate drought condition. Almost all of the state is in the extreme and exceptional drought categories with "Estimated Population in Drought Areas: **2,700,551**". The monitor is updated on Thursdays.

[https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?NV\[8/13/2021 11:58:49 AM\]](https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?NV[8/13/2021 11:58:49 AM])

We have choices we can make. Will the choice you make be something you can be proud of when you tell your children's children?

PFAS – Emerging Chemical of Concern

By Matt Herrick, PG, CHG, CEM, Principal Hydrogeologist | Division Manager, Broadbent & Associates, Inc.
 Sophie Laidler, Marketing Manager, Broadbent & Associates, Inc.

With State and Federal regulations regarding PFAS changing monthly, it may prove difficult to feel at all prepared concerning how and when a facility may need to adapt. One thing is for certain, that regulations will continue to be implemented across the world, and while regulations may currently focus on firefighting foam, there is no doubt that the list of PFAS containing materials will expand.

What is PFAS?

Per- and polyfluoroalkyl substances (PFAS) are a general term applied to thousands of chemicals manufactured since the 1940s and can be found in food packaging (microwave popcorn bags, pizza boxes, etc.), stain and water-resistant fabrics, non-stick products, fire-fighting foams, and many other consumer and manufacturing products. They have been widely used for many decades because of their unique surfactant and oil/water repelling qualities. PFAS are considered emerging chemicals of concern and have been classified as "Forever Chemicals" because they do not easily break down in the environment. PFAS also bioaccumulate in the food chain and can end up in humans primarily due to ingestion of food or water contaminated with the chemicals.

According to the U.S. Environmental Protection Agency (EPA), PFAS may cause reproductive and developmental, liver and kidney, and immunological effects, and in some studies have been considered a possible carcinogen. The U.S. has phased out domestic production of some types of PFAS; however, these chemicals are still produced and used in various commercial and industrial applications. Although



there are currently no actionable EPA standards for PFAS, the EPA has issued interim recommendations for two of the more prominent PFAS, perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS), with screening levels of 40 parts per trillion (ppt) in groundwater and a preliminary remediation goal of 70 ppt for groundwater that is a source of drinking water. Several states have adapted more stringent drinking water-based standards with California leading the way. California's notification levels are set at 5.1 ppt for PFOA and 6.5 ppt for PFOS.

What Does This Mean for Nevada?

The Environmental Protection Agency's (EPA) third Unregulated Contaminant Monitoring Rule (UCMR3) Program determined that a number of wastewater treatment plants, as well as the military fire training areas, are significant predictors of PFAS detection frequencies and concentrations in public water supplies. Public water supplies serving 16.5 million residents in 33 states had levels of PFAS at or above the MRLs. While Nevada was not included in this spatial analysis, the state has taken steps to mitigate risk of PFAS contamination. The State of Nevada has initiated the process for locating potential significant PFAS releases in Nevada as well as other potential exposure sources. Next steps will then be determined by what is discovered through this process.

In the coming years, expect more EPA and state regulations for PFAS, particularly for facilities with public water/wastewater systems, landfills, and airports. Broadbent & Associates, Inc. (www.broadbentinc.com) is currently supporting various clients on PFAS projects in California and Nevada.



Water Infrastructure Act 2021 –

By Kelli Nevills, NvRWA Source Water Protection Specialist

Background: The federal government has provided financial support for water infrastructure projects over the years through a range of programs. The Drinking Water and Wastewater Infrastructure Act of 2021 builds upon legislation previously reported by the Committee on Environment and Public Works in 2020.

One key component of the Act is the set of proposals to address the wide range of water related challenges facing our rural communities.

HIGHLIGHTS:

- The act dedicates approximately \$8.25 billion for a wide range of critical water investments. The largest water related investments are for improving safe drinking water and sanitation.
- The new Act provides a focus on building major dams and water diversions toward a more sustainable approach.
- The new legislation helps correct some of the historical inequities that previous infrastructure bills have perpetuated, impacting those communities who are disproportionately exposed to water insecurity.
- The water system investments are important steps in the right direction. They are not, however, enough alone to prepare water systems to become fully resilient. They need to be able to withstand the stresses and shocks of climate change.

We face several severe and worsening water problems, including:

- Old and deteriorating water infrastructure for safe drinking water and wastewater treatment.
- Newly identified contaminants that are neither regulated or controlled
- Failure to provide modern water services.
- Growing impacts from severe droughts, floods, and fire due to and intensifying because of climate change.
- Water shortages for some farms and some rural communities.
- Destruction of ecosystems, fisheries and wetlands.

Continuing to neglect these water problems will further impoverish this and future generations, while increasing threats to our economy and food supply. Smart water policies are projected to create hundreds of thousands of jobs, improve public health, address long-standing disproportionate impacts on our rural communities and speed economic recovery.

The main focus of this bill is:

- Delivering clean, affordable drinking water to everyone in the US with a focus on removing lead water pipes and service lines / components;
- Modernizing and updating existing federal laws that protect drinking water and regulate pollutants;

- Protecting and restoring natural aquatic ecosystems;
- Improving access to safe water and sanitation in communities, including Tribal lands.

Historically, Federal investments have supported the construction of major water related infrastructure projects. This bill is no exception. A major difference is that the new bill refocuses funds to modern priorities that involve a longer-term water resilience ideal. For instance, this bill includes investments in nature-based solutions, including ecosystem restoration, water efficiency, water reuse, flood and drought programs, dam safety and rural communities. The new bill is designed to correct some of the inequities previous bills and policies have perpetuated on our rural communities who are disproportionately affected by water insecurity. Section 50108 of the bill requires the EPA to submit to Congress a comprehensive report on these municipalities, communities and Tribes that must spend disproportionate amount of household income on access to public drinking water or wastewater services that have unsustainable levels of water related debt. The report must also include recommendations for how to best reduce these inequities and improve affordable access to water services. The EPA must also provide grants to states and Tribes to help schools test for and remediate lead in their drinking water and grants to improve water quality or water services on Native Lands/Reservations by prioritizing projects addressing emergency situations occurring due to lack of access to clean, safe drinking water that threatens the health of Tribal populations.

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What Can We Expect?

The new infrastructure act will also provide funding for watersheds projects available through USDA's Natural Resource Conservation Service (NRCS), which helps communities recover from the impacts of natural resources.

Some of these programs are:

- Watershed and Flood Prevention Operations Program
- Watershed Rehabilitation Program
- Emergency Watershed Protection Program
- Funding will be available for existing and new projects.

Many other sections of the Infrastructure Act will address water issues including:

- Reduce the vulnerability of US water systems to cyber attacks, improve water efficiency programs, expand job training, diversity and opportunities in the water and wastewater sectors
- Improve water data sharing
- Expand groundwater recharge and protection
- Satisfy long neglected water rights obligations to Native American tribes

There are also additional investments provided for non-water projects that provide water "co-benefits". Some of these are:

- Ecosystem restoration. Nationwide, this provides \$2.1 billion over 5 years for a wide range of projects to improve the ecological health of lands and waters, including detecting and removing invasive species, restoring streambeds, improving water quality and fish
- Funds allocated to the states for transportation projects also provide support for flood protection and aquatic ecosystem restoration, assessment of transportation risks from floods, droughts and fire.
- A National Academy of Sciences study will be done on best management practices for stormwater to reduce runoff pollution associated with severe storms.

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- The Natural Resources-Related Infrastructure, Wildfire Management and Ecosystem Restoration provides \$250 million over 5 years to decommission and clean up old Forest Service roads to restore passages for fish and other aquatic species, taking in account the foreseeable change in weather and hydrology and support other projects in the National Forests that improve the resilience of roads, trails and bridges.

CONCLUSION

The ultimate success of this bill to address our water problems will depend on how the authorized funds are actually allocated and spent. This means systems should seriously consider moving forward now with projects that are planned or being considered over the next several years. Success will also depend on the ability of the federal agencies, states, local communities and tribes to create and mobilize jobs, find additional investments and implement the needed projects. The proposed investments in this bill are a step in the right direction. They are not enough alone, to prepare our water systems to become fully resilient. They need to be able to withstand the shocks and stress of climate change. This will require an "all in" approach to ensure people and nature have the water they need to thrive and all our rural communities are protected from intensifying water related disasters. Nevada Rural Water Association can help you navigate these "waters" by helping our rural communities obtain the technical assistance and financing necessary to develop drinking water and waste disposal systems and source water protection.

Sources:

<https://www.congress.gov/bill/117th-congress/senate-bill/914>

<https://nrwa.org/congress-passes-historic-infrastructure-bill-including-billions-in-new-federal-water-funds/>

<https://www.rd.usda.gov/programs-services/water-environmental-programs>

Attendee Registration

Register on-line at www.nvrwa.org or complete and return this form

Attendee Name _____
Water/Wastewater System _____
Address _____
City _____ State _____ Zip _____
Phone Number _____
Email Address _____

Attendee Registration

FULL REGISTRATION

Members - \$340

Non-Members - \$495
Three days of technical sessions, Exhibit Hall access, Vendor Meet and Greet, Vendor Luncheon and Awards Banquet on Thursday.

TWO DAY REGISTRATION

Members - \$285

Non-Members - \$400
Two days of technical sessions, Exhibit Hall access as well as access to activities and meal functions on days of attendance.

ONE DAY REGISTRATION

MEMBERS - \$230

NON-MEMBERS - \$345
Technical sessions, Exhibit Hall access on Tuesday or Wednesday and access to activities and meal function on day of attendance.

***If you are unsure of member status please verify with NvrWA*

Method Of Payment

Send Invoice Attendee Check System Check

Enclosed (payable to NvrWA)

Credit Card Paypal-On NvrWA.com

AMEX MC VISA

Credit Card Number _____ Exp. Date _____

Name as Printed on Card _____ Billing Zip _____

Signature _____ Sec. Code _____

A 3% Non-Refundable fee will be added

**Registration
Deadline:
March 15, 2022**

Days Attending

If not full registration, please indicate days attending

Tuesday, March 22nd

Wednesday, March 23th

Thursday, March 24th

Scholarship Applicant

Yes

No

**Deadline is
February 28th**

Return Form To:

Completed forms can be mailed, emailed or faxed to:

Nevada Rural Water Association
363 Fairview Drive
Carson City, NV 89701

Phone: (775) 841-4222

Fax: (775) 841-4243

Email: janet@nvrwa.org

Registration is also available at

www.nvrwa.org

SRF Scholarship Application

Application Submittal Deadline: February 28, 2022

The NvrWA Scholarship is funded by a grant from the State of Nevada, Division of Environmental Protection. This is a cost reimbursement program for those operating small drinking water systems. Qualifying costs include: lodging at the host property and conference tuition. The scholarships are competitive and awarded based on an assessment of need, using information provided in this application. A minimum of 4 training hours must be logged on each day of attendance in order to be reimbursed. *All fields below are required.*

Please Print Or Type

Applicant Name _____

Address _____

City _____ State _____ Zip _____

Phone _____ Email _____

Have you attended the NvrWA Annual Conference before? Yes No Year(s): _____

Have you attended training in the past twelve months? Yes No Total Hours: _____

System Information

Water System Name _____ Water System Number _____

No. of Active Connections _____ Median Household Income \$ _____

Source of MHI _____

No. of Full-Time Operators _____ System meets certification requirements Yes No

No. of Part-Time Operators _____

Is the applicant a system operator in an hourly paid position? Yes No

Approximate hours per week dedicated to system operation _____

Other jobs/duties performed at the same community by part-time operator(s) _____

Date of last Sanitary Survey or Inspection of the system _____

Significant deficiencies (if any) noted in the survey or inspection report _____

Upgrades or renovations needed to address these deficiencies, or other improvements/renovations, and estimated cost _____

System water quality problems experienced during the last five years _____

Requested Training Topics _____

Signature _____ Date _____

Please return this application along with a **completed registration form** to:

Nevada Rural Water Assoc
363 Fairview Drive
Carson City, NV 89701

Phone: (775) 841-4222

Fax: (775) 841-4243

Email: janet@nvrwa.org



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Nick Ross
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Max's Wastewater Corner: Answers

- 1) d
You would use Ammonium Hydroxide when trying to check for a Chlorine leak. If Chlorine is present, when coming in contact with Ammonia a white gas - like smoke is seen.
- 2) True
Dechlorination is the process of removing residual chlorine from disinfected wastewater Prior to discharging into the environment. Sulfur dioxide is most commonly used.
- 3) a
Nitrification consumes alkalinity at the rate of 7.1 to 7.2 pounds of alkalinity per each pound of ammonia oxidized.
- 4) c
A shock load is a stronger than normal concentration of influent BOD coming into a wastewater treatment facility. This stronger than normal influent concentration places a greater oxygen demand on the activated sludge process.
- 5) False
Chlorine gas is heavier and denser than air thus it will settle and be found near the floor.



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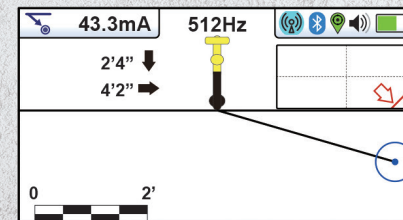
vLoc3-Pro Receiver

- Color-coded EM distortion warnings
- Offset vector locate mode
- Optional receiver/transmitter link
- Cloud-based data warehousing
- Internal data logging
- Optional Bluetooth connectivity



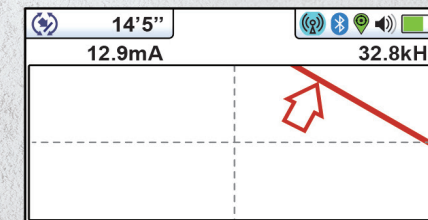
vLoc3-5000 Receiver

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- Sheath to earth fault locating (with A-frame accessory)
- Distortion Alert assist in recognizing signal bleed-over
- Offset vector locate mode
- Optional receiver/transmitter link
- Cloud-based data warehousing



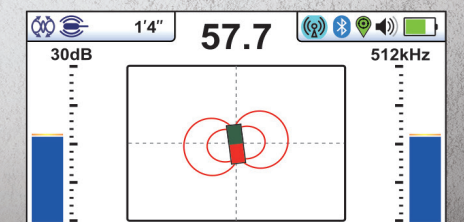
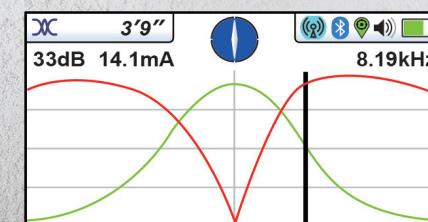
^ **Vector Locate** - shows orientation, line position, and distance relative to the locator in 3D

> **Transverse Plot Screen** - is used to display the peak and null to compare distortion shape



< **Plan View Screen** - displays the theoretical line in 2D from above ground in omnidirectional mode

∨ **Sonde Screen** - arrow guidance showing direction to the sonde and depth of cover



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