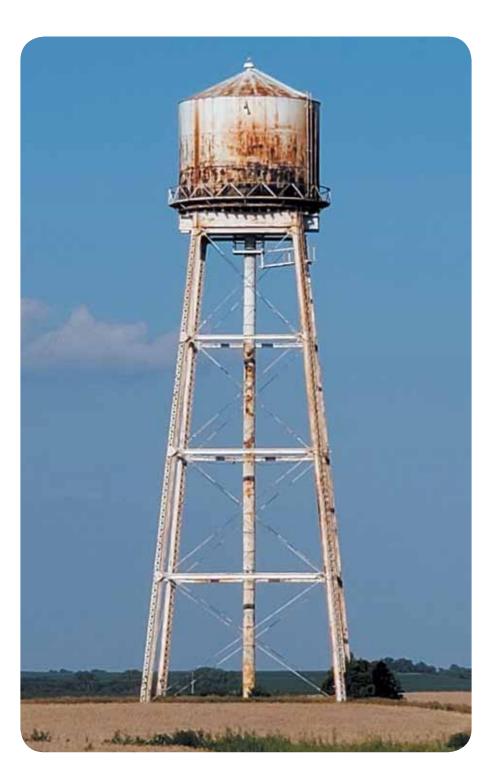
Nebraska Good Water News

ISSUE 3/2020





Nebraska Rural Water Association

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Nebraska Good Water News

"Keeping Our Water Safe"

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"Nebraska Good Water News" is a quarterly publication of the NEBRASKA RURAL WATER ASSOCIATION, 3390 Ponderosa, Wahoo, Nebraska 68066. Phone 1-800-849-8039 or (402) 443-5216 or FAX (402) 443-5274. Copies are mailed to all member rural and municipal water operators, Federal and State Legislators, associates and individual members.

The NEBRASKA RURAL WATER ASSOCIATION is dedicated to the improvement and assistance of all public water systems in the State of Nebraska.

NOTICE: Nebraska Rural Water Association does not endorse any particular product or company in this publication. Membership and advertising should not be taken as an endorsement.

Issue 3/2020

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On the cover:

Unused and abandoned water tower somewhere in Nebraska.

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2020 TRAINING

Backflow Prevention Cross-Connection Control Course - 5 Day

October 19-23

Wahoo

Wastewater Training

- August 12 Bridgeport
- September 9 Duncan
- October 1 Omaha

November 24 Auburn (Sustainability)

December 22 Wahoo

Water Operator Training		
October 14	McCook	
November 17	Mullen	
December 9	Tecumseh	

December 15 Wahoo

Backflow Continuing
Education TrainingSeptember 8McCool Jct.September 10OrdOctober 13So. Sioux
CityOctober 15AtkinsonNovember 17WahooDecember 8MitchellDecember 10CambridgeDecember 16Wahoo

August 12 - Trenching & Shoring

August 13 - Confined Space Entry

Wastewater Certification Course

February 11-14 Mechanical April 14-15 Lagoon July 7-10 Mechanical Wahoo North Platte Wahoo

Fall Western Conference Gering, Nebraska September 1-3, 2020

Keep checking the training on our website for any additions or cancellations.

www.nerwa.org

NeRWA Update

By Salli Kemerling, Office Manager

The past few months, specifically since March, have been quite a turmoil for everyone. It has been no different at Nebraska Rural Water Association.

This all started right before our annual conference in Kearney. We were able to have the conference, but right after that everything changed. We had to cancel all our classes for the months of March, April and May. Some of them were cancelled by us, but most of them were cancelled by the hosting system. The fall conference held in western Nebraska has also been cancelled.

We cancelled 10 one-day classes, all wastewater certification classes and one Grade 6 certification class, which was rescheduled and held already.

NeRWA is no longer conducting any wastewater certification classes due to our instructor retiring. The Grade 6 certification classes will go on as usual. The water, backflow and wastewater classes are already back in progress. The instructors will try as best they can to reschedule some of the classes that were cancelled.

Water and backflow licenses do not come up for renewal until the end of next year. There are some options for operators to obtain all the continuing ed hours. If things continue to open up and restrictions are lifted, classes will continue as usual. The annual conference in Kearney makes it possible to obtain all 10 hours needed for the two-year period. Also available will be at least 10 wastewater hours and five backflow hours.

As far as restrictions go for the one-day classes, there will be social distancing. Masks are not required unless specified in the agenda or if you feel more comfortable with one. However, if anyone from the DHHS or DEE are going to be present, then masks will be mandatory.

We know that all of this can be confusing. All our classes are posted on our website, nerwa.org. You are able to see the agenda and register for any classes. And if you do have any questions or concerns, please call our office or email any of the staff.

ATTENTION!!

BE ON THE LOOKOUT FOR SOME POP-UP WATER AND WASTEWATER CLASSES IN THE WESTERN HALF OF THE STATE! WE ARE ALL BUMMED OUT THAT THE CONFERENCE IN GERING HAD TO BE CANCELLED SO WE WANT TO GET OPERATORS SOME MUCH NEEDED HOURS. AT THIS TIME, WE ARE HOPING TO PROVIDE 3 OR 4 TRAINING SESSIONS SO OPERATORS DO NOT HAVE TO SCRAMBLE FOR THEIR RECERTIFICATION HOURS IN 2021. IF YOUR COMMUNITY IS INTERESTED IN HOSTING A TRAINING SESSION PLEASE FEEL FREE TO CONTACT THE OFFICE OR ANY OF THE FIELD STAFF AND WE WILL TRY TO PUT IT ALL TOGETHER! THANK YOU FOR YOUR PATIENCE, AND STAY HEALTHY AND SAFE!!

NOTES	(S Kaima amison Raima amison
211 Pine St P.O. Box 66 Lindsay, Nebraska 68644 (402) 428-4010 70: Nebraska Rural Water Association 3390 Ponderosa Drive Wahoo, NE. 68066 2/03/2020 The Village Board of Trustees, Utilities Superintendent and Clerk of the Village of Lindsay wants to acknowledge our appreciation to NeRWA for your support to our village. Mith our new water tower's increased elevation creating an increase in With our new water tower's increased elevation creating an increase in water pressure by 301b's we noticed a water leak in front of our Fire Station. With our new water consumption, in a very short period you located the leak with-in a few inches. Then when a residence in town started to experience a high amount of water consumption, in a very short period you located the leak in their yard hydrant. Wor expertise and knowledge is an invaluable resource for this village saving us many dollars and hours of wasted energy.	Dear Nebraska Rural Water, Manks for always being When we have a water issue when we have a water issue donation of \$200 to your equipment fund as a small token of our Nillage of Morse Clerk Bluff
saving us many dollars and ments We thank each of you and the NeRWA team very much for your support. Board Chair; Ken Kurtenbach: Ken Kurtenback Trustee; Dave Arit: Dane all Trustee; John Busselman: Chr Busselman Trustee; John Busselman: Chr Busselman Trustee; Amy Wiese: Luy Wilf Utilities Superintendent; Steve Johnson: Men Men Clerk; John Haynes: John Haynes (19/20) Dear Ne RWA, The City of Rendolph woodd like Ho thank Mike Shanzel, Ratid Petersen, and Randy Wellbusch for their busting of Patrid Petersen, and Randy Wellbusch for their busting of malifie water leaks and for reviewing our water/scour rates. malifie water leaks and for reviewing our water/scour rates. We appreciation	Status Status <t< th=""></t<>
Patrick Peterson, and Randy Hellbusch and our water/scover parts multiple water leaks and for reviewing our water/scover parts we are grateful for the valuable services that you offer and the experise to give advice and solutions to the problems that arrive. Please accept the enclosed donation in appreciation for your help. Sincerely, City of handolph	usthe recipient of the NeRwa Scholarship This miney Will help Me with my expenses when I attend Northeast Community College in Narfold becoming a utility lineman. Thank you again for this schelarship.

City of Osceola 350 N. State Street + P.O. Box 701 Osceola, NE 68651 Phone: (402)747-3411 • Fax: (402)747-8191 CITY OF PONCA Office 402-755-4165 Fax 402-755-2618 February 19, 2020 PO Box 465 Ponca, Nebraska 68770 Nebraska Rural Water Association 3390 Ponderosa Dr. Wahoo, NE 68066 March 26, 2020 Dear NRWA: Please accept the enclosed \$250 donation in appreciation of all of the help provided to the City of Osceola in the last year. The City Council and employees thank you for your assistance and consulting in leak location, computer system, tapping and reconnection fees, and other services received during 2019. Nebraska Rural Water Association 3390 Ponderosa Street Wahoo, NE 68066 Your support, knowledge, and advise are priceless to us! The City of Ponca would like to thank Mike Stanzel and Chuck Buckley for their help in Ine City of Ponca would like to thank Mike Stanzel and Chuck Buckley for their neip in performing a leak detection and televise the sewer line to isolate a water main leak. By providing the City with your service we were able to locate and repair water main leak. Sincerely, John Jarmin Please accept the enclosed contribution in appreciation for all the assistance you provide. John Jarmin Utility Superintendent Sincerely, Denise & Peterson, MMC Denise L. Peterson, MMC City Administrator/Clerk/Treasurer enclosure Charles Hays ncil Pr Renee Johansen RURAL WATER DISTRICT NO. 1 Donald Graff Don Sterup Craig Johnson Mayor Dustin Augustin PAWNEE COUNTY 606 G Street, PO Box 263 ouo & Street, rU box 403 Pawnee City, Nebraska 68420 Photocol Box 402 cen 2010 rawnee City, Neoraska 08420 Phone and Fax: 402-852-2019 more on next page _____ Village of Cordova P O Box 42 January 9, 2020 Cordova NE 68330 Enclosed is our donation to the equipment fund. We always appreciate your quick response to all four needs. Keep up the good work!!! We have also enclosed our 2020 dues payment. four needs. Keep up the good work!!! We have also enclosed our and the second sec Nebraska Rural Water Association Nebraska Rural Water Association 3390 Ponderosa Wahoo NE 68066 3390 Ponderosa Wahoo, NE 68066 Dear NeRWA On behalf of the Village Board of Cordova, we would like to thank Randy Hellbusch for all of his help with our Water Rate study that he conducted for our town. He is very professional to the point of getting us the information the board was looking for. He is very thorough, easy to work with, and very accommodating. He can see things that we don't, knows the ins and outs of our lay out. Sincerely, Sincerely, Village Board of Cordov And Cordova AMA CURSAN Brian Justres MOLANCE McLaughlin Lacy McLase Office Manager Enclosure

January 10, 2020 VILLAGE OF ARCADIA Dear Nebraska Rural Water Scholarship Committee, 110 West Bridge Street, PO Box 95, Arcadia, NE 68815-0095 Phone 308-789-6552 Fax 308-789-9112 Email arcadiane@nete.net I am sincerely honored to have been selected as the recipient of the Nebraska Rural Water Association Scholarship! Thank you for your generosity, which will allow me to attend the University of Nebraska - Lincoln to study computer science with a minor in business. With my education, I hope to build software applications that allow people to maximize their talents and solve tangible problems in our community. I hope that one day I will be able to help students reach their goals just as you have helped me. June 8, 2020 Thank you again for your thoughtful and generous gift! Nebraska Rural Water Association Sincerely, 3390 Ponderosa Drive Wahoo, NE 68066 We would like to thank you for coming to our Village to take the 24 hour monitor test for our influent wastewater sample. It is with much appreciation that we enclose a check in the amount of \$50 for the service provided. 1-27-2020 Daniel Stora Daniel Stara PLEASE Accept Aquinas Class of 2019 THIS DONATION AS A Thank you again for all the assistance and support you provide to Nebraska communities. We hope you keep receiving funds from the State of Nebraska to continue your services. 835 C Street THANK YOU FOR AL David City, NE 68632 402-367-2113 THE ASSISTANCE Warne Hunt You'VE GIVEN TO THE Sincerely, Village Board of Arcadia and Staff Heath Unsave VILLAGE OF MURRAY ! Dale 2 Paider JINCERELY, SHELLI amy Sillivan BOARD OF TRUSTEES VILLAGE OF DORCHESTER hington Ave., PO Box 287 | Dorchester, NE 88343 02-946-3201 | Fax: 402-946-3571 | dorchester@dio conar DORCHESTER Dear Nebraska Rural Water Association, April 7, 2020 My name is Bailey McLaughlin and I am a graduate of Pawnee City Public Schools from Pawnee City, Nebraska Rural Water Association 3390 Ponderosa Drive Nt. I will be otherading Bryan College of Health Wahoo, NE 68066 Sciences this full. After I complete Cillege I hope to become a successful nurse. I have been Dear NeRWA staff, Selected to recieve a Scholarship from the The Village of Dorchester Board of Trustees and employees would like to extend our sincere appreciation to Nebraska Rural Water Association for the many NRWA. I feel honored and grateful to services you provide to our community. Your organization is always willing to share recieve this scholarship because it will make services you provide to our community. Four organization is always willing to shar your knowledge and provides prompt service so that our utilities continue to run College More affordable and it feels like my Your ongoing efforts to manage and promote safe, clean water for the citizens of Naturally and commanded Place accent our donation of \$500.00 to continue in Nebraska are commended. Please accept our donation of \$500.00 to continue in hard work in school prid off. Thank you for supporting a student from PCPS and for Supporting me as I get a college education. Thank you for everything you have, done to help our Village with our Best Regards, Georie Jager Sinardly, Water problem Mike Stanzel and Buck Buckley Bailey Medaughlin Glorid J Riley, Village Clerk - Treasurer were a great help and this task could not have been accomplished without them. We are so Thankful! The Village of Wood Lake * Please accept the enclosed donation to your equipment fund,



Back to the Basics

By Randy Hellbusch, Circuit Rider

Much of the conversation I have with water operators these days seems to always turn to some newly regulated contaminant or treatment process. With new EPA-proposed regulations this isn't surprising. For example there is the Arsenic rule, Uranium and the Groundwater rule. I could go on and on. Sometimes it is easy to get caught up with all of the things we are possibly going to have to face in the future.

The reality is we all need to do a better job of taking care of the basic aspects of our water systems. How much do you really know about your distribution system? Many systems are in need of simple maps of the distribution system. Valve locations are another very important part of operating the system. Another very important aspect of a water system is the source. Below are some questions to ask yourself and find out just how good of shape your system is in and just how much do you know about your water system.

1. SOURCE

A. Availability

- a. Is your water source readily available for future wells?
- b. Do you own the land? If not, is it for sale?
- c. What is the land and the area around your water source used for?
- B. Draw Down
 - a. What is your draw down rate and is it increasing?
 - b. How deep is your well?
 - c. How many more feet of water can you draw down until other sources need to be investigated?
 - d. Do you take draw down at least monthly?

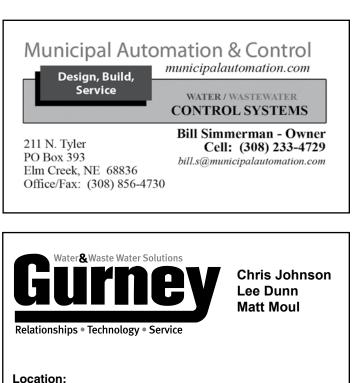
2. WATER STORAGE

- A. How many gallons are you capable of storing?
- B. How long will it take to use stored water?
 - a. During normal usage
 - b. During fire usage
 - c. If your pumps malfunction for any reason
 - d. Can your water storage satisfy the demand of two fires at one time and for how long?

3. DISTRIBUTION GRID

- A. Flushing the system
 - a. Do you flush the system?
 - b. How often do you flush?
 - c. How many gallons are used for flushing?
- B. Number of fire hydrants
 - a. GPM flow of each hydrant
 - b. Static pressure
 - c. Flow pressure
- C. Is the system mapped
 - a. Are lines located with size?
 - b. Are valves located?
 - c. How many turns to shut the valve off?
 - d. Are customer service lines located?

If NeRWA can help you with any of these things, give us a call.



Location: 4428 South 108th Street Omaha, NE 68137

(402) 551-7995 (402) 553-5879 Fax

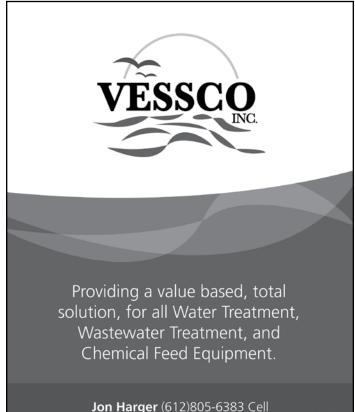


Line Freeze Kit for the Win!

By Mike Stanzel, Circuit Rider

20 Years!!! Yes, that's right, for 20 years a homeowner has worried about his curb stop that has not been able to be located and about what would happen if the valve in his house became inoperable. Well, this nightmare became a reality, when a faucet needed to be replaced in his house and his ³/₄ inch valve would not turn without fear of breaking it.

Here is the story. PeopleService took over managing the town's water and sewer system in the early months of 2000. I, myself, spent time looking for this particular water shutoff several times when I was an operator for PeopleService. Over the years there were several different operators, all of whom spent numerous hours searching for this curb stop with no success. I came to work for NeRWA in 2008 and again spent countless number of times over the years searching for the shutoff and came to the conclusion that it was plastic.



Cory Sonner (515)509-0470 Cell

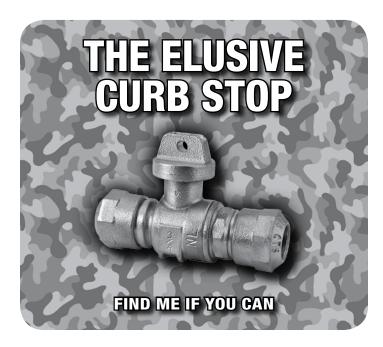
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Recently we were contacted by the city clerk to help locate five remaining curb stops so they could complete their installation of new water meters and, you guessed it, this one was on the list. Well, this time I even brought in some reinforcements, Randy and Pat, who have a combined 107 years of experience in the water business. LOL and we still could not find this line.

I finally made contact with the homeowner and made an appointment to meet him at his house to see for myself what this line is made of. Well, low and behold, it was copper, so I attached my locator and was able to trace the line out the front of the residence. So I'm thinking a SLAM DUNK. I will find the curb stop. NO!!!

By this time the homeowner was desperate to get something done. So I scheduled an appointment to return with our freeze kit, freeze the line and install a new valve in his house along with a new updated water meter. This time a HUGE SUCCESS! The job was completed in a short time, the homeowner was extremely grateful for our assistance and he said he definitely sleeps better at night knowing his water shutoff works.

By the way, we still can't find the curb stop! (TO BE CONTINUED)



ADVERTISEMENT FOR NEW STAFF

The City of Plainview is accepting applications for a full-time City Maintenance worker. The position will be 40 hours per week, Monday-Friday, 7:00 A.M. to 4:00 P.M., with additional requirements for after-hours calls, weekends and holidays. On call schedule will rotate between others on staff. Qualifications: Legally authorized to work in the United States, high school diploma or GED, Class A CDL (or obtain within one (1) year of hire), obtain Grade IV water license and Grade L wastewater license within one (1) year of hire, general knowledge of equipment and repair, concrete work, ability to work independently, good driving record. Ability to work with public and in variety of elements. Salary dependent on qualifications and experience. Benefits include health insurance, retirement plan, vacation and sick pay. Interested individuals should submit an applications can be found on the City of Plainview website www.cityofplainviewne.com, or by stopping into the City Offices during open business hours. Position open until filled. The City of Plainview is an equal opportunity employer.



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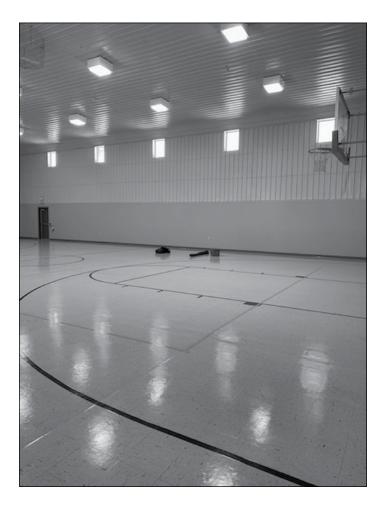


Back in the Saddle

By Pat Petersen, Training and Technical Assistance Specialist

Looking back at the past few months is like looking at a blurry picture. Blurry because we really didn't know how the COVID-19 virus was going to affect all of us then and how it continues to affect us now. Our annual conference was the last time our organization was involved in one of the most important things for our members—the training of water and waste water operators. That was March 11!! Then three months after the COVID pandemic was declared, we could train operators again in person, but with strict guidelines and measures to follow. It didn't matter what I had to do, this is what I signed up for when I took this job.

After cancelling the April (Mitchell) and the May (Hartington) classes, it was time to move forward with planning the Sutton water operator class. This class has become my highest attended class for the past several years.





Last year 53 operators were in attendance and there was no way we were going to all fit in the Fox Hollow Clubhouse if we had to "social distance" this year. After visiting with Gary, Sutton's water operator, we came up with a plan. We would use the Sutton Community Center—a gymnasium!

When I arrived in Sutton I had some ideas on how I would set up the gym for the class. Little did I know that each one of those ideas would end up in a different configuration on the gym floor. Finally, two-and-a-half hours later it was ready to go. The attendees would be social distanced, and we would not be close to the actual capacity of the building. When I left the community center that afternoon it felt good to have the feeling of normalcy knowing we were going to have a class in the morning.

On the morning of June 25, rescheduled from June 10, we were back in action! All 32 of the pre-registered operators were there. As I made some announcements at the beginning of the session, it was made clear to me that this is how these men and women want to gain their recertification hours. They want it to be personal, to be able to talk to other operators and to just be a part of the group. I felt the same way, this is how we do it!!

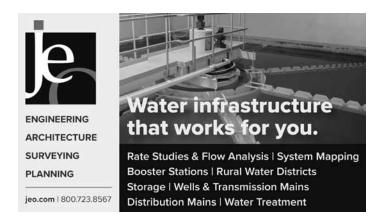
One thing we did do at this class was some "hands-on" type learning. We learned some theories of how to locate utilities right away in the morning and then we actually went outside



and saw how it is done. Some of the operators brought their own locators and were given instructions on how to use them. It went well. Hand-in-hand with the locating, operators were given an in-depth overview on what is new at Nebraska 811. Just like that, the morning session was over.

The afternoon flew by. We actually took time to listen to operators' experiences and how the pandemic has not only changed their lives but how they do things as operators. Sampling techniques and proper procedures when dealing with the customers were two discussion points. The discussion was real and it meant something to everyone. It was a great day!

Although the picture still remains a little blurry on where we are heading, at least we have achieved some normalcy to how we are doing things. I really appreciated the flexibility and understanding of the attendees and presenters. Also, Gary and the City of Sutton helped me out tremendously when it came to finding a different venue. Who knows, maybe next year we'll be back out at Fox Hollow....



CANCELLATIONS!!!

THE CONFINED SPACE ENTRY AND TRENCH AND EXCAVATION SAFETY CLASSES SCHEDULED FOR AUGUST 12 AND 13 HAVE BEEN CANCELLED.

> WE HOPE TO FIND A WAY TO PROVIDE THESE TYPES OF CLASSES IN THE FUTURE.

THE FALL CONFERENCE THAT WAS TO BE HELD IN GERING ON SEPTEMBER 1-3 HAS BEEN CANCELLED.

STAY TUNED!!!

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Leak Detection

By Scott Finke, Circuit Rider

Do you need a leak detection survey done? Most villages or cities that have had them done have most likely learned a lot about their system and the amount of water that is being wasted. If your system is losing 30%, 40%, 50% or more gallons of water you probably should have a leak detection survey done. This is possible if you have water meters. Let's say if your water loss is 15 gallons per minute, you could have 15 curb stops that are leaking one gallon per minute. Someone from NeRWA would come out, listen to all of your

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Doug Yantzie, Municipal Manager

Office: (888) 496-3902 After Hours: (402) 759-2929 curb stops, try and find your leaks and figure out how to help you.

Over the past year and a half, I have been going to villages and doing leak detections while listening to fire hydrants and water main valves. I have found some fire hydrants that leak a lot of water. If you have ever wondered how much water a fire hydrant can lose, just take this next analogy into consideration. Fire hydrants leak 24/7 for 365 days a year, so if a fire hydrant leaks one gallon per minute that comes out to 1,440 gallons per day. Over the course of a year that is 525,600 gallons and if your system has five hydrants that are leaking, your system will be losing around 2,628,000 gallons of water. Hydrant flushing is a good way to get rid of the rust particles that can stick to the rubber gasket at the bottom of your fire hydrant. If flushing doesn't solve the problem then you will have to tear the fire hydrant apart and have the gasket replaced at the bottom of the hydrant. That is why in the winter time you will see icicles hanging down from the outlets. It is because the drain holes are plugged and your hydrant is leaking. Most of the time, you will not know your fire hydrants are leaking because they will leak out of the drain holes.

Water loss is a big deal. Water is what makes up 70% of the earth's surface, yet only 0.3% of that 70% is consumable by humans. Keeping that water from being wasted is a very important task to stay updated on. Over years the gallons add up very quickly. Even if you don't have water meters, you could still be losing water that you don't know about, so it is still a good idea to have a leak detection survey done.



If you would like to have a leak detection survey done, let NeRWA know and we will get you on the list.



Restarting the System

By Barney Whatley, Capacity Development Specialist

COVID-19 has changed the way we do business in this country on a number of levels. Many operators have been told not to go into customer's buildings, and this makes it impossible to replace meters that quit working. Some systems were on week-on and week-off schedules to lessen the possibility that employees were infecting each other or all getting infected at the same time. Municipal offices are often closed or only have limited access. Customers are expected to put their payments in the drop box or payment slot outside. This is a two-edged sword, in that the clerk does not have to listen to the sob story about why the customer cannot pay their entire bill, but on the other hand the clerk also cannot personally notify the customer of the consequences of not paying the bill.

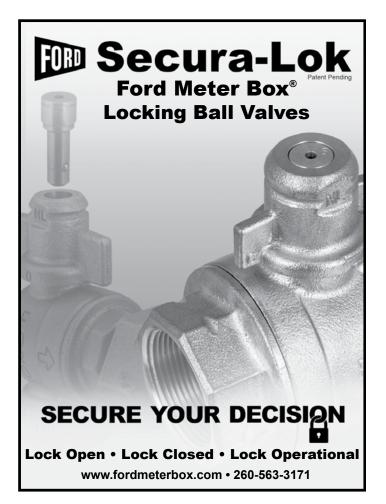
Training has been affected by the virus as well. We were very lucky to finish the Annual Conference in March just prior to the nationwide lockdown policies being put in place. All of our training for the last part of March through the middle of June had to be cancelled, and we are now trying

"We all hope that the virus goes away over the summer and that we can get back to our normal work routines in the fall." to reschedule the missed classes and continue with the scheduled classes for the rest of the year. With the Western Conference having been cancelled due to the difficulty of maintaining social distancing with a large crowd and the inability of vendors to give a definite answer related to their attendance, we are trying to schedule a few more classes in the western part of the state to accommodate operators who need CEUs. If this pandemic had occurred

during an odd numbered year, the issues we are all facing would be magnified many times. At least now there is a year left to get your required hours for renewal.

The state has indicated that there will be latitude in the number of hours needed for the renewal of water operator licenses, although wastewater certificate holders may be allowed a couple of months leeway in receiving CEUs, depending on the date of expiration. Webinars and Zoom meetings have been recommended for getting needed training hours, but NeRWA is currently not set up for this type of training. Getting speakers to come to a training session is difficult enough, but trying to coordinate a zoom meeting with four or five speakers and getting the timeline for them all set up is something we just are not prepared to do at the present time.

We all hope that the virus goes away over the summer and that we can get back to our normal work routines in the fall. We also hope that the virus does not return this winter or that there is a vaccination that will assist in fighting it so that we can begin to treat it like we currently treat the flu. We need to maintain distancing from those who are most vulnerable to the virus and have the greatest chance of a bad outcome while still completing the tasks that need to be completed in our professions. As long as the hosting municipality does not cancel the scheduled classes or the local health department does not prohibit them, our continuing education classes will be held as scheduled.



Water Facts & Trivia

Did you know...?

- 1. Most of the earth's surface consists of water; there is much more water than there is land.
- 2. Water can not only be found on the surface, but also in the ground and in the air.
- 3. There is the same amount of water on earth as there was when the earth was formed. The water that came from your faucet could contain molecules that Neanderthals drank.
- 4. The overall amount of water on our planet has remained the same for two billion years.
- 5. There are two kinds of water; salt water and freshwater. Salt water contains great amounts of salt, whereas freshwater has a dissolved salt concentration of less than 1%. Only freshwater can be applied as drinking water.
- 6. Water consists of three atoms, 2 Hydrogen atoms and an Oxygen atom, that bond together due to electrical charges.
- 7. The weight of a water molecule depends on the number of moles present, as it is 18 grams per mole.
- 8. Water moves around the earth in a water cycle. The water cycle has five parts: evaporation, condensation, precipitation, infiltration and surface run-off.
- 9. In a 100-year period, a water molecule spends 98 years in the ocean, 20 months as ice, about 2 weeks in lakes and rivers, and less than a week in the atmosphere.
- 10. Most of the earth's surface water is permanently frozen or salty.
- 11. Water regulates the earth's temperature.
- 12. Water freezes at zero degrees Celsius.
- 13. Water vaporizes at a hundred degrees Celsius.
- 14. Water is the only substance that is found naturally on earth in three forms: liquid, gas, solid.
- 15. Frozen water is 9% lighter than water, which is why ice floats on water.
- 16. A liter of water weighs 1.01 kilograms.
- 17. It doesn't take much salt to make water "salty." If onethousandth (or more) of the weight of water is from salt, then the water is "saline."
- 18. When water contains a lot of calcium and magnesium, it is called hard water. Hard water is not suited for all purposes water is normally used for.
- 19. To determine water quality certified agencies take samples that are tested in a laboratory. The samples are tested on various factors, to determine if they suffice water quality standards.
- 20. Each country has its own water quality standards that determine to which degree water should be purified, depending on the purpose it will be used for.

About water quantities:

- 1. As oceans are very wide and there are multiple to be found on earth, oceans store most of the earth's water. This is apparently 97% of the total amount of water on earth, 2% of which is frozen.
- 2. 80% of the earth's water is surface water. The other 20% is either ground water or atmospheric water vapor.
- 3. Of all the water on earth, only 2.5% is fresh water. Fresh water is either groundwater (0.5%), or readily accessible water in lakes, streams, rivers, etc. (0.01%).

About water & health:

- 1. A person can live about a month without food, but only about a week without water. If a human does not absorb enough water dehydration is the result.
- 2. A person should consume 2 liters of water daily to live healthily. Humans drink an average of 75,000 liters of water throughout their life.
- 3. Humans cannot drink salt water.

About water use and saving water:

- 1. Humans use more and more water each year.
- 2. Americans use five times the amount of water that Europeans use.
- 3. Humans daily use about 190 liters (50 gallons) of water.

About water pollution and related problems:

- 1. Humans largely influence the factors that determine water quality, as they dispose of their waste in water and add all kinds of substances and contaminants that are not naturally present. We now know more than 70.000 water pollutants.
- 2. About 450 cubic kilometers of wastewater are carried into coastal areas by rivers and streams every year. These pollution loads require an additional 6,000 cubic kilometers of freshwater to dilute the pollution. This amount equals to two-thirds of the world's total stable run-off.
- 3. Public water suppliers must meet or exceed certain standards. The kind of standards that are used differ for each country. Many public water suppliers consistently supply water that is much better than the minimum standards.

About water as a raw material:

- 1. It takes 5,680 liters (1,500 gallons) of water to process one barrel of beer.
- 2. It takes 450 liters (120 gallons) of water to produce one egg.
- 3. To process one chicken, we need 44 liters (11.6 gallons) of water.

This information was obtained from https://www.lenntech.com/water-trivia-facts.htm

Learning Some of the Things NeRWA Does

By Adam German, Wastewater Technician

I mentioned in my first article how I was looking forward to working with the NeRWA. After being a part of the team for a few months now, the job has proven to be very rewarding. I have traveled extensively throughout our great state of Nebraska, teaming up with Buck, Mike, Randy and Pat to help operators. I have really enjoyed providing guidance to some of Nebraska's newer operators. I am finding that when I visit with our experienced operators I am usually the guy walking away with more knowledge than I showed up with. I enjoy getting people talking, asking about their experiences in the field and using those conversations as another tool in the toolbox to help other operators that may be having the same issues in their communities. I probably shouldn't describe 'work' as 'fun' but I have to tell you...I've been having fun.

The NeRWA team has recently loaded up the sewer smoker and taken it to several different communities. The sewer smoker is a great tool to find your infiltration issues. During the smoking process you can find main line/service line failures and broken clean-outs. You may also discover a contractor hooked sump pump and gutter drains directly to the customer's sewer lines. At one site we discovered a home with smoke coming from the middle of their yard and directly out of the drainage pipe. It happened! Without the sewer smoker this would have most likely never been discovered. With it we were able to find several of that community's infiltration issues.

Another useful infiltration tool the NeRWA has in its box is a sewer camera. Actually they have two. Buck and I have been to several of our towns checking lines and manholes for water in places water shouldn't be. We have found manholes that are broken down with water seeping in through the walls, 2x4 chunks of wood in the lines and, of course, plenty of tree roots. With the use of the camera the operators know exactly where their problem sits and are able to get it fixed at a lower cost to the town.

I have also been able to help out with sludge testing. One nice sunny day, Buck and I were treated to a ride in a rowboat on a lagoon. That may sound a little more romantic than it was. It was the first time I have been in a boat without a beer in my hand in decades. Rowing a boat to 9-12 different spots through a moss/algae filled lagoon turned into quite a bit of work. We both learned that although wind makes the lagoons work, the wind is certainly not your friend during sludge testing. It was quite the day, but when it was all said and done the system was satisfied that their lagoons were in good condition.

Another perk of this gig is learning where all the great restaurants and taverns are. Buck knows them all. The Burrito King in Madison, the BBQ joints in Clay Center and David City, the Tumbleweed in Broken Bow, all the way to the Peppermill in Valentine. Those are just a few. I can't wait to try all of them.

I would like to thank the NeRWA crew for showing me the ropes the last few months and allowing me to tag along. I feel like I have successfully helped a few systems and have learned quite a bit in just a short time. I can't wait to hit the road again and learn some more. Stay safe out there.



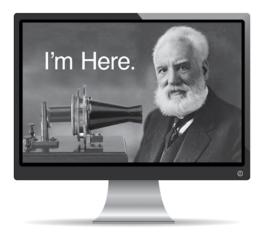


ZOOM Meetings: The Bane of the Vain

By Ken Halvorsen, Systems Specialist

Almost two hundred years ago Samuel Morse invented the telegraph, making it possible to communicate over long distances. A half century later Alexander Graham Bell was awarded the patent for the telephone, which became widely used about a hundred years ago. Who would have thought that technology would grow at such a rate that today we are using through-the-air video on our phones and computers?

Pandemic, working from home, no travel, social distancing, all add up to the need for alternative ways to do what needs to be done. The last time we met as a large group was at the March Water Conference in Kearney. From that time on, working from home and staying away from our fellow human beings has been the order of the day. So, how does one get anything done when you cannot meet with people? Either folks can meet in a large room at a great distance while wearing masks or they can use the alternative, virtual meetings, otherwise known as "ZOOM."



Now, I am not a great fan of these virtual meetings. To me, ZOOM is a word that children use when playing with toy cars and they are making them go fast. It could have been my father zooming around in his 1934 Ford back in the day. Also, it could be me when I zoom around on my Harley through the countryside. But, sitting around in my makeshift office, talking to people on the computer does not feel like zooming to me.

A few days ago, my wife asked me why I disliked virtual meetings so much. My first answer, and probably not the most important one, was, "Because they make me look old."

Now, her really sympathetic answer was, "Honey, you are old." That sure didn't do a whole lot for my ego! She did have a few tips for overcoming my camera shyness. Put tape over the camera on the computer and say, "My camera just isn't working today." Another is to use the telephone instead of the computer. That worked pretty well, until the day I was using my landline on a three hour ZOOM meeting. My phone kept thinking I had left it off the hook and shut down on me every now and again. Then, there is probably the best one, just join the meeting via the computer without the video. You can see everyone else, but they cannot see you. This allows you to be in the meeting and see all the data presented without telling the little white lie about your computer camera.

My vanity aside, this COVID-19 pandemic has forced us to use tools that will be helpful to us even when the time comes that we can meet normally again. Virtual meetings and video chats can save both time and money for the water operator and community. For example, if mileage needs to be paid for someone to come help do a repair, video chat may be a good tool. While just explaining the problem may not be enough for the person coming to know what is needed to solve it, there is a virtual tool to use. With the use of a camera phone and video chat, the operator and consultant may be able to solve the problem in real time. At least they may know what is needed to make the repair and time can be saved. Additionally, filling out forms can sometimes be a difficult problem. By using a video conference, all parties can be looking at the form on their computer screens at the same time. Decisions can be made and the form completed and ready for printing while working from different places. Everyone will have the form without the need to wait until it arrives by snail mail. Virtual signatures are also an option that can often be used in this instance.

At this difficult time of a pandemic, virtual work has been a lifesaver. We have come a long way since the telegraph and Alexander Graham Bell's first telephone. Working face-to -face is still the best solution for meetings. When in-person meetings are not possible, technology has come to work for us. If even an "old guy" like me can figure it out, pretty much anyone can.

If you would be interested in a Board Training Presentation or System Assessment you can call me at 402-607-9750 or email me at ken@nerwa.org.



Wastewater Training and Testing

By Charles Buckley, Wastewater Technician

Hello, Nebraska operators! I have been asked by many operators about wastewater certification classes, as well as testing. As most of you have heard, Mike Lucas has retired from the Nebraska Rural Water Association. Mike has done a great job for Rural Water with his years of onsite assistance and in the classroom. Mike has been battling some illnesses and prayers his way would be greatly appreciated. The

Nebraska Rural Water Association has reviewed the wastewater certification classes and decided they will no longer offer the training. We will, however, continue offering the one day classes for certification hours. Contact the Nebraska Department of Environment and Energy for certification testing dates and other options due to the COVID-19 outbreak. Also, I have been able to get some copies of wastewater study guides that I am willing to share with operators and we have information about some online certification courses.

I have talked with field representatives about classes and testing. What I am hearing is that they are starting to loosen some of their restrictions. They have also stated that with all that is unknown things could close back up if things get worse. I think it is safe to say we are in fragile times.

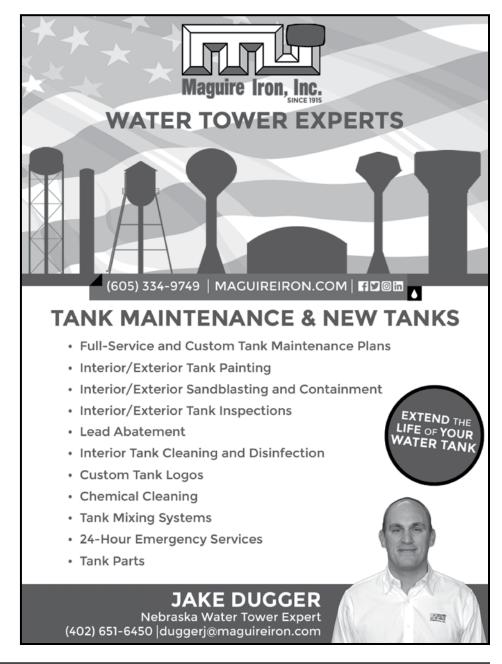
NeRWA is pretty much in full swing. If you need assistance just give us a call and we will help as best as we can. We will also respect the rules set forth by the individual communities.

I would also like to commend all the Nebraska operators for staying on the front line through all this craziness. You are all true, unseen heroes in your communities!

As I have been traveling the state of Nebraska I have found some great places to eat. I would like to share them with all of the operators that read my articles.

- #1 goes to the City of Gordon The Fuel Grill has fantastic dining with a full menu including walleye with an auto-themed décor.
- #2 goes to the City of Madison The Burrito King with a variety of Mexican food.

Enjoy your family and the rest of the summer!





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NeRWA Equipment

The equipment below purchased by NeRWA is used for on-site technical assistance.

All of our assistance and use of the equipment is at "no charge" to any member water system except the Valve Exerciser for which there is a mandatory charge to help with the upkeep and maintenance.

Below is the equipment that you may borrow if it is available. The items in **BOLD** have to be accompanied and operated by one of our technicians.

Water Equipment

AWWA Standards on CD	Hydrant Flow Meters	Pressure Gauges
Backflow Test Benches	Leak Correlator	Pressure Recorders
Certified Backflow Test Equipment	Leak Data Loggers	Pressure Relief Valves
Chlorine Residual Testers	Leak Detectors	Temp & pH Meters
Chlorinators	Line Locators	Valve Box Locators
Groundwater Models	Nitrate Testers	Valve Exerciser
Handheld GPS Units	Pipe Freezer	Well Sounders
<u>Wastewater Equipment</u>		
Flow Meter	pH Meter	Sludge Judge
Microscope	Sewer Smoker	TV Camera

Donations help our association purchase new equipment and maintain it so that we can better serve the needs of water systems throughout Nebraska. We would like to thank you for your support in this endeavor.

If you have any questions regarding this fund or would like further information on what is available, please do not hesitate to contact us.

GUIDELINES FOR RENEWING OPERATORS' LICENSES

This article addresses all fee-based training including all Wastewater certification, Backflow certification, Backflow continuing ed, Trenching and Confined Space classes and both conferences. Any class or conference that has a fee needs to be registered for by faxing a registration, mailing a registration or registering online. WE DO NOT TAKE ANY PHONE REGISTRATIONS OR EMAILS ASKING TO REGISTER SOMEONE FOR A FEE-BASED CLASS.

All water and backflow licenses needed to be renewed by December 31, 2021. The next license period is from January 1, 2022, to December 31, 2023.

The hours required for renewal for each license are listed below: (These hours are not something new.)

- 1. Water and backflow 2-year renewal period requiring 10 continuing ed hours. The end of the renewal period is always December 31 of odd numbered years. An easy way to remember this is just 5 hours per year. Start early in the renewal period to get your hours. The last three months of the second year get very busy. Always register early! We have people trying to register for classes in October thru December close to the date of the class. Truth is that the October, November and December classes are full 2 to 3 months before these classes begin. Then people are scrambling in the last months of the second year to get into classes and there just aren't any openings unless there is a cancellation.
- 2. <u>Wastewater</u> 2-year renewal with 20 continuing ed hours required. The end of the renewal period varies depending on when you get your license.

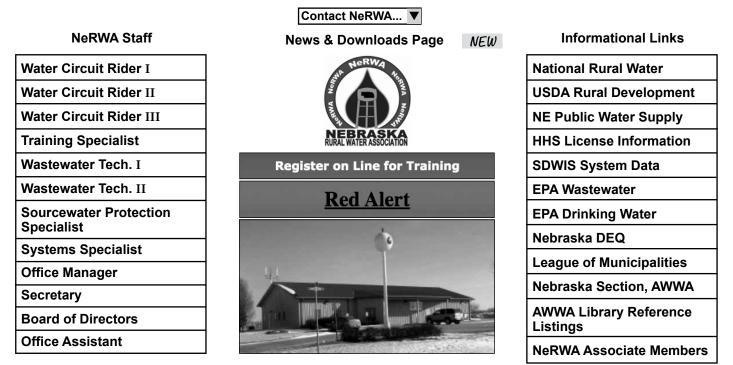
When you attend a class and get a certificate, keep that certificate in a place where you can easily find it. You get a certificate at every training class. You can use your certificates to prove you attended a class. If you lose a certificate, we will issue a second one. After that, a certificate will cost \$20.

We send flyers for the training classes out to all our members. Classes are always published in our quarterly magazine which also is mailed to all our members. We publish a training calendar each year with all our classes on it which is available to all member operators. Our training calendar is on our website, <u>www.nerwa.org</u>. One of the best things for all operators to do is to bookmark this website to keep updated on class dates, where they are held and what is on the agendas. The agendas for the classes are posted about a month before the class starts. Our website is available to everyone, not just members. In those rare instances, any cancellations or rescheduled classes will also be on the website as soon as they are changed.

If you are not a member and would like to receive these flyers, you can become a member with our individual membership. This costs \$50/year. When you register online for any fee-based class, you can also pay online. If you choose not to pay, we will bill you. THERE IS ONE EXCEPTION: <u>ANY</u> backflow class that is held in the last 3 months of the renewal year needs to be paid for prior to the class. If payment is not received, it will be assumed that the person who registered is not attending the class and the space will made available to someone on the waiting list. The reason for this is that people register for classes, find out they have enough hours or something comes up, and they do not call to cancel. There are ALWAYS waiting lists for our Wahoo classes. We have ended up with available spaces in these classes on the day of the class and if we had known ahead we could've filled them with someone on the waiting lists.

Nebraska Good Water News

Nebraska Rural Water Association - 3390 Ponderosa Drive - Wahoo, NE 68066 Home | Office | Membership Info | Training | Annual Conference | Fall Conference



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NOW IS THE TIME TO ACT

Get Started on Your Water Utility Construction Project

Do you have a Water Utility Construction Project? Now is the time time to act! Rates are at an all time low, and with the current pricing being opportunistic and taking action can result in benefits not only for yourself but for the customer as well. Consider the below items that detail positve reasons to act now that you can present to your governing body.

- Interest rates are at an all-time low.
- More project contractors are available, increasing the number of bids, potentially lowering project costs.
- Fuel costs are low, lowering pipe related costs.
- Most material costs for projects are down.
- Shipping costs for many have decreased.
- Road and water projects are easier to schedule due to decreased volume in traffic.
- Low construction costs and available contractors are not guaranteed to last.











USDA Rural Development is committed to helping improve the econmy and quality of life in rural America. Offering loans, grants and loan guarantees are some of the ways Rural Development is supporting rural America.



Nebraska Rural Water Association

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