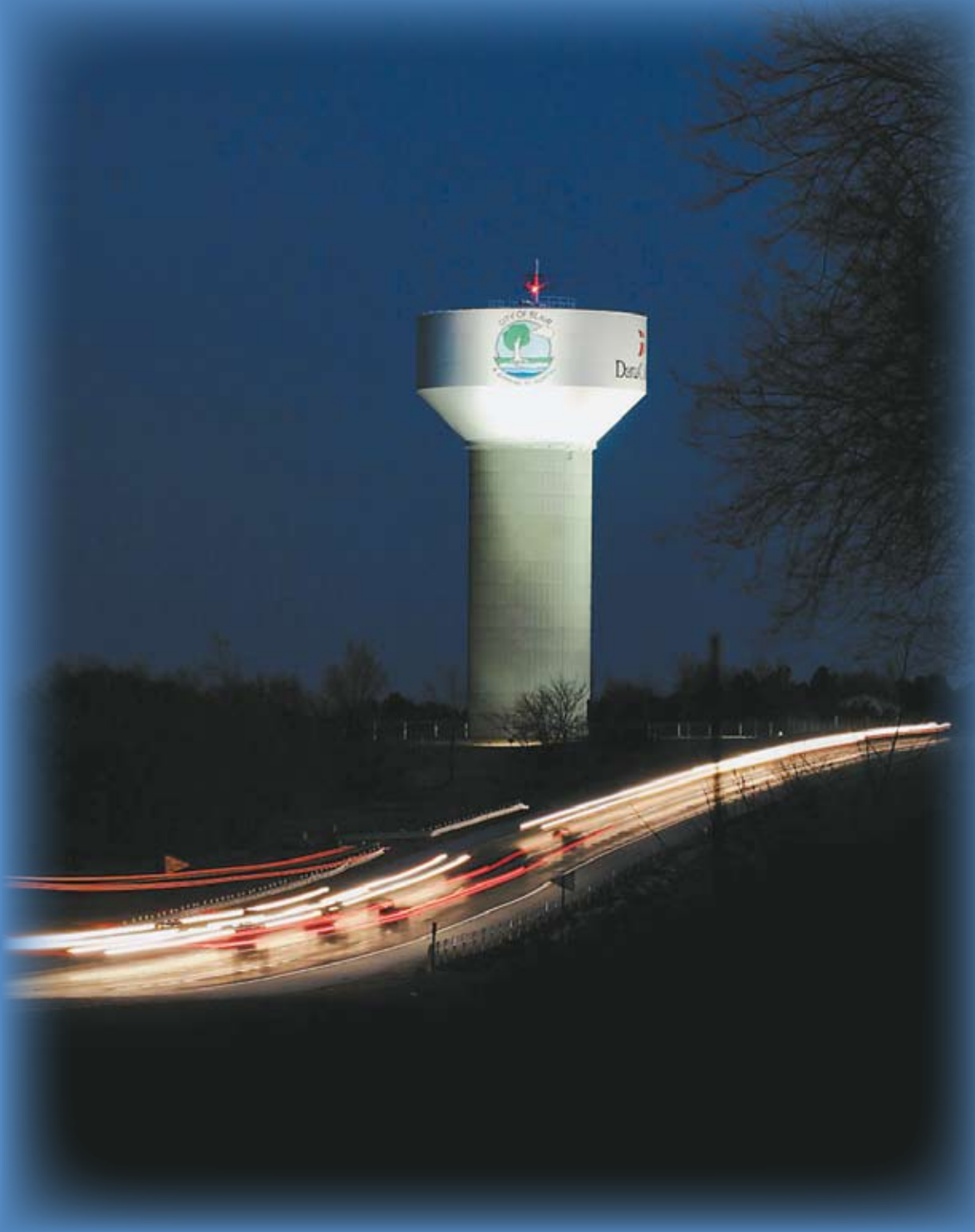


Issue 3/2010

Nebraska Rural Water Association



NEBRASKA GOOD WATER NEWS



FLOW METERS ✓



SAFETY GLASSES ✓



FLOW METERS ✓



PIPE FITTINGS ✓



SEWAGE PUMPS ✓



SWING CHECK VALVES ✓



MARKING PAINT ✓



IA PLATES ✓



MOWERS ✓



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LAB WARE ✓



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BALL VALVES ✓ FLOW TI



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“Nebraska Good Water News” is a quarterly publication of the NEBRASKA RURAL WATER ASSOCIATION, 3390 Ponderosa, Wahoo, Nebraska 68066. Phone 1-800-842-8039 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.

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Charles Bausch, Training Specialist
Doug Buresh, ARRA Circuit Rider
Ken Widhalm, ARRA Circuit Rider
Mike Lucas, Source Water Specialist

Website: www.nerwa.org

On the cover:

The Blair elevated water tower was built in 2004-05 as a joint effort between the City of Blair and the Papio Missouri NRD when the NRD developed the Washington County Rural Water System #2. The tank holds 1 million gallons of water and feeds the NRD Washington County Rural Water System, Village of Kennard, OPPD Power Plant and approximately one-third of the City of Blair. The tower is a composite tank which means it is built with a concrete base and a steel bowl. The tank cost \$1.3 million dollars with Blair owning 75% of the tank and the NRD owning 23% of the tank.

In an emergency the tank can be used to receive water from MUD in Omaha through the NRD rural water systems to supply the residents of Blair with potable water until the city's water plant is back on line.

How'd We Do and Letters From...



City of North Bend
cinoben@gpcom.net
P.O. Box 401
607 Main Street
NORTH BEND, NE 68649
402/652-3584
fax: 402/652-3591

June 3, 2010

Nebraska Rural Water Association
3390 Ponderosa Drive
Wahoo, NE 68066

RE: donation

Dear NE Rural Water Assoc.,

The City of North Bend would like to thank your staff for assisting our water operator in locating two water leaks within the City. We have enclosed is a donation for your assistance. Thanks so much.

Respectfully,

Theresa Busse
City Clerk



City of Cambridge
PO Box Q
722 Patterson Street
Cambridge, NE 69022
voice: (308) 697-3711
fax: (308) 697-3253
e-mail: kkinne@swnebr.net

Mark Harpst, Mayor
Council Members
Dee Bantam
Gary Benson
Derek Raburn
Jo Fuller
JP Trumble
Clint Wickizer
David Houghtelling,
Utility Supervisor
Kandra Kinne,
City Clerk/Treasurer

April 22, 2010

Thank you!

Mike Stanzel
Nebraska Rural Water Association
390 Ponderosa Street
Wahoo, NE. 68066

Dear Mike,

Thanks for coming to Cambridge and helping us with your leak detection equipment. We have not seen results as yet, but the two hydrants are being repaired. Time will only tell!

The City of Cambridge would like to donate to your equipment fund to say thank you for all you have done. It is great knowing all the staff and equipment NeRWA has to offer to help small towns like Cambridge.

Sincerely,

David Houghtelling
Utility Supervisor

City of Blue Springs

104 East Broad Street
P. O. Box 25
Blue Springs, NE 68318
Tel: (402) 645-3539
email: cbskathie@windstream.net

June 15, 2010

Nebraska Rural Water Association
3390 Ponderosa Drive
Wahoo, NE 68066

Dear Sirs:

Please accept the enclosed donation and the gratitude of Mayor, Council, and City employees for the recent water and sewer rate study compiled and presented by Randy Hellbusch. The speed, accuracy and impact of his calculations, as well as his dedicated attitude and follow-up were greatly appreciated.

This is just one more example of the expert services available through the NRWA, and an opportunity for us to acknowledge the full range of NRWA support to municipalities.

Sincerely,

Lonnie D. Meyer, Mayor
Blue Springs, NE

PHONE 402-534-4237
FAX 402-534-9882
EMAIL VOUTICA@ALLTEL.NET

VILLAGE OF UTICA

466 1ST STREET
P.O. Box 158
UTICA, NEBRASKA 68456

REGULAR MEETING
FIRST MONDAY
OF EACH MONTH

May 12, 2010

Nebraska Rural Water Association
3390 Ponderosa
Wahoo, NE 68066

Dear NeRWA,

The Utica Village Board of Trustees would like to thank the very capable NeRWA staff for coming to Utica to meet with our maintenance men on water department issues. Your assistance, expertise and professionalism are truly appreciated.

Please accept this donation to your equipment fund and our thanks for your valuable services.

Sincerely,

Village Board of Trustees
Utica, Nebraska

Village of Diller

Box 157
Diller, NE 68342

June 15, 2010

Nebraska Rural Water Assoc
3390 Ponderosa
Wahoo NE 68066

Dear Sirs,

In March of this year, the Village of Diller requested help from Nebraska Rural Water Association in locating a shut off valve on Commercial Street which was needed for the new Fire Hall. At the same time, the Village of Diller also had the technician locate other shuts off valves within the Village that we had been unable to locate.

In appreciation of your assistance with this project, the Diller Village Board would like to donate to the Nebraska Rural Water Association.

Thanks again for your help.

Sincerely,

Leatha Christ
Leatha Christ
Village Clerk



**Keep
Fremont
Beautiful**

925 N. Broad St. • Fremont, NE 68025 • (402) 727-2808

Nebraska Rural Water Association
Mike Lucas
3390 Ponderosa St.
Wahoo, NE 68066

Dear Mike -

Thank you so much for displaying Rural Water information at the KFB Eco-Fair!

The Eco-Fair continues to be a relevant educational event because of the variety of displays and the activities that are offered. Thank you for donating a portion of your day to assist KFB and provide needed information to the students. (I think you traveled the farthest - thanks!)

Mark your 2011 Calendar - the KFB Eco-Fair will be held on April 13, 2011. We hope you will be able to display next April!

Best Regards,

Sue
Sue Reyzlik
KFB Exec. Director

Thank you!

NeRWA

Enclosed is a donation from the Village of Barveston. Please give a BIG Thanks to Randy Hellbusch for helping us with the water contract with Wymore.

*Just a kind word of thanks
for everything you've done.*

*Village Board of
Barveston*

May 13th, 2010

Nebraska Rural Water Association
3390 Ponderosa Drive
Wahoo, NE 68066

To all the NeRWA folks,

On behalf of the Village Board of Stuart, Bob Lockmon our superintendent, and myself, I would like to thank you once again for all the services you provided, not only recently but in years past. Randy, thanks for help with the rate survey, and Jim, for helping us camera a couple of our sewer lines to determine where problems were located. Please accept the enclosed check as a token of our appreciation for the always excellent and valuable services you provide.

Mark Stracke
Mark Stracke, Village Clerk

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Larry Butler, Trustee
Del Stracke, Trustee
Dana Steinhauer, Trustee
PO Box 177
Stuart, NE 68780





Village of Bennet Nebraska
Est. 1871



April 21, 2010

Nebraska Rural Water Association
3390 Ponderosa Drive
Wahoo, NE 68066

Associates;

Thanks for your continued dedication in assisting us with water and waste water issues. Your circuit riders are always friendly and helpful. Note the enclosed donation toward your equipment fund.

Sincerely,

Brian Tingley,
Bennet Utility superintendent

Nebraska Rural Water Association,
Thank you so much for offering and awarding me a \$500 scholarship! This will really help when I attend Central Community College in Hastings this fall. I really appreciate it!

Thank you!
Taylor Fenece

Dear Russ + Mike

We would like to thank you for coming to Decatur to help with our water leaks. We appreciate it very much.

The Decatur
Village Board

VILLAGE OF HARRISON

P.O. BOX 5

HARRISON, NEBRASKA 69346

June 10, 2010

Nebraska Rural Water Association
3390 Ponderosa
Wahoo, NE. 68066

Dear Nebraska Rural Water Association:

The Village of Harrison would like to take this opportunity to thank everyone at Nebraska Rural Water for all your assistance in the past and most recently for Jim Heyen's help with a problematic sewer line. We certainly appreciate all you do for us.
Please find enclosed a donation for your equipment fund.

Sincerely,

Village Clerk

Village Utilities Superintendent

<u>Water Operator Training</u>	
August 10	O'Neill
August 11	Madison
October 26	Henderson
October 27	Fairbury
October 28	Plattsmouth
November 9	Grant
December 8	Bancroft
December 9	Wahoo
December 14	Falls City

<u>Backflow Re-Certification Training</u>	
September 14	Falls City
September 15	York
October 12	Wayne
October 13	Papillion
November 9	Wahoo
November 16	Cairo
November 17	Bloomfield
December 7	Mitchell
December 8	Imperial
December 9	Cambridge
December 14	Wahoo

<u>Wastewater Training</u>	
October 7	Wahoo
October 14	Hickman
November 16	Bridgeport
November 18	Creighton
December 7	Wahoo

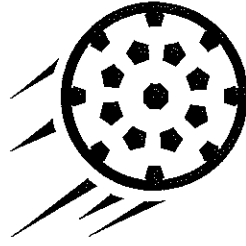
Nebraska Rural Water Association
3390 Ponderosa
Wahoo, NE 68066
www.nerwa.org

2010 TRAINING

<u>Grade 6 Backflow Prevention Cross-Connection Control Course - 5 Day</u>	
October 18-22	Wahoo

September 8	Confined Space Entry	Wahoo
September 9	Trenching & Excavation Safety	Wahoo

August 31-Sept. 2	Fall Conference
Gering Civic Center Gering, Nebraska	
October 5	UTILITY EXPO
Christensen Field Fremont, Nebraska	



**NEBRASKA RURAL WATER
2010 GOLF CHALLENGE**

RIVERVIEW GOLF CLUB

SCOTTSBLUFF, NEBRASKA

AUGUST 31, 2010

2:30 PM SHOTGUN START

2 PERSON FLIGHTED SCRAMBLE

\$60.00 TEAM/ \$30.00 PERSON

(You don't need a partner, there will be
someone there to team up with)

INCLUDES 18-HOLES GOLF WITH CART

MULLIGANS AVAILABLE

CASH PRIZE\$

FLAG PRIZE\$

Must be a Registered Attendee of the NeRWA Fall Conference

The New Water & Sewer Rate Comparison Study

By Carol Jasa, Office Assistant

Work has started on NeRWA's 5th biennial water and sewer rate comparison study. By now all water and wastewater systems should have received a letter, questionnaire and a form to fill out with their system's information. The deadline to return this information is August 16, 2010. Including your rate schedule (ordinance or resolution) is very helpful. Then as the information is returned the process of updating the information in the previous study begins.

If for some reason your system did not receive the letter, questionnaire and form to fill out, please give NeRWA a call. We will gladly get that material to you so that you can be part of our study. The more systems that participate, the more helpful the rate comparison study will be for those who use it in the future.

There is more information than just water and sewer rates provided in this study. This book will show what systems have a water treatment plant and whether a sewer system has a mechanical plant or a lagoon. Also, deposit, tapping, disconnect and reconnect fees for water and/or sewer, along with whether a system has water and/or sewer debt and the amount, which is optional, are still included.

Accuracy in reporting your information is important. Our rate study will only be as good as the information we receive. So be sure your information is correct before you send it and be sure that all your information is included. For example, if you have metered rates you will have a base fee, a usage fee by gallons or cubic feet, and possibly a certain number of gallons or cubic feet of water that are included as part of the base fee. And of course, the base fee can vary by the size of the meters. Depending on your system's setup, all the information that relates to your rates needs to be included. Then I will have to work at accurately transferring your information.

Believe me, I have learned a lot about water and sewer rates as I have worked on each of these studies. It has been very interesting to see the variety of ways systems charge and the changes that systems have made over the years. Also, I have had to learn how to work with

converting cubic feet of water to gallons of water so that everything is in the same format so that it can be compared easily. Even some of the abbreviations that are used were new to me.

Completing and returning your information entitles you to a free rate book upon request if you are a member and at a reduced rate of \$25.00 if you are a non-member. Otherwise, a book will cost \$25.00 for a member and \$50.00 for a non-member.

Thank you to all the systems who have sent in their information and to those who will be in the near future. You are the reason we are able to put together a rate comparison study.

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Lincoln, NE	402-420-0755
Minneapolis, MN	612-331-9100
Sioux Falls, SD	605-368-5793
Slater, IA	515-685-2250
Superior, WI	715-392-5121
Washburn, ND	701-462-8588
Willow Springs, IL	708-467-0125

3100 East Hennepin Avenue
Minneapolis, MN 55413
Phone: 612-331-9100
Fax: 612-617-8696





Where Am I?

By Barney Whatley, Capacity Development Specialist

I am by nature a geek! There, I said it. Anyone who knows me very well knows that to be true. Most guys like to go shopping at Cabela's or Bass Pro. Not me. Best Buy and Radio Shack are like candy stores to me. I can wander around the electronics for hours on end checking out all the new stuff that is available. The problem is: I am also cheap. I have a hard time justifying purchases of high dollar items and an even harder time justifying them to my wife.

One day I received an email from an electronics store that will remain nameless to protect the innocent. They had a refurbished GPS unit available for the low, low price of only \$69.95. How in the world could I ever pass up a deal like this? I couldn't. I immediately purchased it and started figuring out how I was going to explain this to my wife. I thought I might explain that I needed it for work as I travel all over the state and it would assist me in getting where I needed to be. Since I have been working for NeRWA for over 11 years and have been to almost every water system in the state during that time that excuse was probably not going to work. I racked my brain, but could not come up with anything worthwhile.

Then the day came when my GPS unit was delivered. I quickly took it out of the package and set it up. I figured if I could figure out how to run it I might dazzle her with the wonder of it and she would not pursue the justification. This of course did not work. The very first words out of her mouth the moment she saw it were, "Do we really need that, or is it just a toy?" I explained how useful it could be when we went travelling and how it would help me at work. "Oh, it is a toy, then," was her reply. I explained what a good deal I had gotten on it hoping to appeal to the "shopping sense" that all women are supposed to have, but hers seems to be dormant, and she was not impressed. I then demonstrated how it works, and she advised me that the lady's voice was somewhat grating, which is actually true. I named the unit Gigi (for Garmin Gal) and used it until our next big trip arrived.

I knew we would be driving to California in order to attend National Rural Water In-service Training, and advised her that it could be very useful on that trip. Her reply was "If I have to listen to her as we travel 1,500 miles, I will put her in the trunk or under the tire." When the time for our trip finally came, we set the trip computer and started out. Since we travelled long distances on I-80, I-70 and I-15, Gigi was relatively quiet during the majority of the trip. As we were entering Anaheim (which is part of the greater

Los Angeles Metropolitan Area) we were instructed to take the highway 30 on ramp. Immediately after receiving that instruction we came across a traffic sign advising us that the highway 30 on ramps were closed and we needed to find an alternate route. PANIC TIME!! I opened the menu and pushed the detour button, and we were directed around the closed on ramp and down a side road to another on ramp for highway 30. And even though I missed one of the turns, Gigi patiently (kind of) directed us back to the route we needed to take. When we pulled into the driveway of the hotel, my wife had a new appreciation for Gigi. "I guess it might have been worth what you spent," was the remark she made, and that is as close to complete acceptance as I will ever get. At that point I figured it was safe to tell her I had purchased an update to the internal maps that cost more than Gigi did. Maybe I should have left well enough alone.

Although I have found the unit to be very helpful in getting me to systems I need to visit, I have also found that it can make mistakes. There is one town that does not have a post office, so when I try to get to that town, it sends me to another town if I give it an address on the north side of town and still another if I give it an address on the south side of town. I have also noticed that some of the state highway maps have State Highway 15 and State Highway 57 reversed in places according to the road signs, and this seems to confuse Gigi.

Overall, I highly recommend GPS units for assisting in getting from place to place. The annoying voice will at least alert you to upcoming turns and keep you from daydreaming right past your turn. Even though I still don't always know where I am, I do know how to get to where I want to be.

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Whose Leak is it Anyway?

By Mike Stanzel, Deputy Circuit Rider

I have been involved with a countless number of water leaks ranging from small SIDs to villages to larger towns and cities all across this great state of Nebraska. It is amazing how every system classifies the service connections differently. All systems own the transmission lines. However, the service line is the million dollar question. Who is responsible? It seems that probably half the systems I have worked with in the past take ownership from the water main to the curb stop. Then the customer is responsible from the curb stop to the house or business. Other systems claim that the resident or business is responsible from the house all the way to the main. My theory on that is what happens when the curb box gets damaged or filled with debris or dirt making it unable to operate. Then you have to ask the homeowner to dig up the box and fix it so that you can shut them off for non-payment. (Good luck with that!)

If you have a water service line leaking and you are unsure of how your town or village handles this, you can search through the ordinances to get clarification.

There is also another scenario that comes to mind that

**FOR SALE
BY THE
VILLAGE OF BARNESTON**

Coin Operated Water Machine. Brand new and still in box. We had originally bought this to provide water to people in town such as farmers and the like to fill water tanks, etc. The board decided not to install it due to lack of personnel to maintain it and lack of a good location. Would accept \$1,200.00 or best offer.

Contact Kim Petersen at 674-3350 or Keith Vorderstrasse at 239-4314.

I have run into in the past. You have a service line that is bubbling up at the curb stop box and you are unable to get a wrench on it to shut it off to determine whose side it is on. I have run across this situation many times and here is what I did. Prior to digging up the stop box myself, I would talk to the homeowner and explain to them that the homeowner is responsible for the line from the stop box to the house and I will dig it up and repair the leak. However, if the leak is on their side of the curb stop I would explain that they will be getting charged for the necessary repairs. If they did not like what I had to say, I would tell them that they can hire a contractor to dig it up themselves but that would most likely be much more expensive than what the city can do it for.

So good luck digging, and most importantly BE SAFE!

WATER WORKS BRASS AND PIPELINE PRODUCTS



The Ford Meter Box Company, Inc.



<http://www.fordmeterbox.com>

260-563-3171





One-Stop Shopping at WWAC

By Doug Buresh, ARRA Circuit Rider

The Nebraska Water Wastewater Advisory Committee (WWAC) was created in 1997. It was one of the first undertakings of its kind in the country where state and federal agencies combined to work together to address water and sewer projects jointly. The idea was to find the best funding source for each community in Nebraska. At times the best funding source is a collaborative effort between two or more of the participating agencies. Other times only one of the agencies involved is best suited to fund a particular project.

Stakeholders in WWAC include the U.S. Department of Agriculture Rural Development (USDA RD) with their water and wastewater loan and grant programs, Nebraska Health and Human Services System Regulation & Licensure (NHHS R&L) responsible for the Drinking Water State Revolving Fund (DWSRF), Nebraska Department of Environmental Quality (NDEQ) responsible for the Clean Water State Revolving Loan

Fund (CWSRF) and the Nebraska Environmental Partnerships Program (NEP), and the Nebraska Department of Economic Development (DED) for the Community Development Block Grant (CDBG) program. WWAC activities are coordinated by a steering committee with no specific agency in charge. The purpose of WWAC is to optimize sources and uses of funding for water and wastewater projects, to provide the best funding package to each community, to work with communities as a team to help them build a project, and to provide one-stop shopping for communities looking to finance their projects. The committee meets monthly in Lincoln to identify the best funding options for new projects and to discuss the progress of projects funded jointly.

In order to be eligible for consideration for project funding from WWAC you need to submit a Water Wastewater Common Pre-application form along with a Preliminary Engineering Report or Facility Plan. It is important to complete and submit your annual Intended Use Plan for any planned water and sewer projects. Each project is ranked using priority points. The higher the priority points, the more likely you are to get your project financed.

During my travels across Nebraska as an ARRA Circuit Rider, I have been asked many times about grants available to fund water and wastewater projects. Barring a second stimulus package, ARRA funds for water and sewer projects in Nebraska have all been used up. The good news is, the agencies involved with WWAC aren't going away. They are still in the business of providing funding for these projects. Unfortunately there isn't a lot of opportunity to have a project one hundred percent grant funded. However, grants are available for those that qualify. These grants may or may not be available in the future. In my humble opinion, most likely there will be less government grant funding available, not more, for the smaller communities in Nebraska. If you have a need to upgrade your water or wastewater infrastructure, now might be the time to look into grant funding through WWAC.

For more info about WWAC contact Jackie Stumpff at (402)471-3193 or Jackie.stumpff@ndeq.state.ne.us/

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Drain Valves



No Freeze Drain
Valve Installed



Model iBi Hydrant
Pressure Relief
Valve w/hose fitting



Model iBi
in the field



Hydrant Pressure
Relief Valves

Babco Valves

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Swivel adapter to fire hydrant
No freeze design



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Paul Baburek, President



Water Operator License Renewals

By Charles Bausch, Training Specialist

Lately I have received several questions about the Water Operator license renewals. We should know by now that in 2011 ALL water operators will be on the same two year cycle. This means every water operator in Nebraska will renew at the same time starting on December 31, 2011.

What about the water operators who renewed licenses on December 31, 2009? You will be required to get at least 10 continuing education hours by the 12/31/2011 expiration date. For the water operators that renew at the end of 2010 you will be required to obtain at least 5 continuing education hours before the end of 2011. Then at the end of 2011 everyone will be on the same two year cycle which will require at least 10 hours per two year renewal period.

A few other things to keep in mind:

- NEVER WAIT UNTIL THE LAST MONTH OF YOUR RENEWAL PERIOD TO GET YOUR HOURS. You never know when the weather may cause classes to be canceled or some other unforeseen event could happen that would keep you from getting to that class.
- REMEMBER - THERE IS NO REASON YOU CAN'T GET MORE THAN THE REQUIRED HOURS TO KEEP YOUR LICENSE. View it as education and just to be on the safe side, getting extra hours toward your license can't hurt.
- ALWAYS KEEP A COPY OF YOUR CLASS ATTENDANCE CERTIFICATE. Keep a copy of certificates you receive from ANY classes that you attend. This way if your records are different than what the Nebraska Department of Health and Human Services (DHHS) are you can send in your certificate to get credit towards your water license. Also any

classes taken after October on your renewal year will not show up in the system so you will more than likely have to send in your class certificate.

- CHECK TO MAKE SURE YOUR ADDRESS IS CORRECT ON YOUR LICENSE RENEWAL. DHHS will have your contact information on their website. If you need assistance with finding your licensing information on DHHS' website let me know. You can also get to their website from our home page: nerwa.org by clicking on [HHS license information](#) on the right-hand side of our home page. If your address is incorrect, you need to contact Mike Wentink at 308-535-8135, or by email at mike.wentink@nebraska.gov. and get that information updated. Remember it is your responsibility to make sure that DHHS has your correct address for sending out your renewal.
- FINALLY, IF YOU NEED MORE HOURS WE HAVE A LIST OF TRAINING CLASSES FOR THE YEAR ON OUR WEBSITE AT THE TOP UNDER TRAINING AND ALSO IN THIS ISSUE.

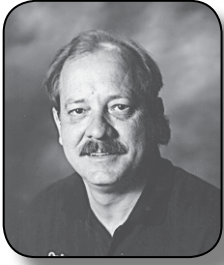
Good luck and I hope to see you at one of our future water training classes.

Constantly Striving To Provide More Services To Our Members

NeRWA is always looking for new and better ways to serve our membership. In sticking with this philosophy, we recently purchased a HURCO SD800 Spin Doctor Hydraulic valve exerciser. It is something we have had many requests for over the past few years. Valve exercising is one of the most important maintenance procedures a system can perform, yet is often the most neglected. Face it, manually turning valves is a very strenuous, time consuming and difficult task. NeRWA field staff will stay on site and assist with the use of the valve exerciser just as we do with any other aspect of technical assistance. A nominal fee will however be required to insure that the equipment is kept properly maintained.

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Variable Frequency Drives and Energy Savings

By Randy Hellbusch, Circuit Rider

I haven't had any specific hands-on experience with Variable Frequency Drives, but it is something that interests me. I feel it can be one of the greatest operational tools to come along for water systems in a long time. At our annual national in-service this June I had the opportunity to listen to John Regnier, with our national office, give an informational talk on how utilities can save money on energy costs. The installation of a VFD could help your utility to accomplish that. The following is an article written by John Regnier on how VFDs may be able to help your system.

Ergs, Joules & Such

Notes on the Energy Savings for the Rural Water Community and Maybe Others

By John E. Regnier, NRW

Curious about Variable Frequency Drives? Read on

So far in the brief history of this newsletter we've concentrated on those practices that normally don't involve capital expenditures. I'm going to break with that history and spend at least this issue talking about variable frequency drives (VFDs). All of you have probably heard the term and may have considerable experience with these devices that have so much potential to reduce energy consumption and improve system operations. What I'll be reporting to you I've gleaned through a modest research effort into the subject and not from personal knowledge - I regret that I have absolutely no personal experience with VFDs. I would welcome comments and suggestions from you readers who have first hand knowledge about this important subject.

- First, we need to go back to school briefly if this discussion is to make sense. Definitions first: VFDs are devices that change the speed of electric motors by changing the frequency of the electric current supplying the motor. Other names you'll hear bandied about are Variable Speed Drives (VSDs) and Adjustable Speed Drives (ASDs). These names are not necessarily interchangeable but refer to the process of controlling motor speed by mechanical or electronic means. In this issue we'll talk just about VFDs.
- A word about frequency - this refers to the property of alternating electric current of changing polarity from positive to negative in cycles. The number of these cycles that occur per second is the frequency - one cycle per second is one Hertz (Hz) and most AC current has a frequency of 60 Hz.
- Turns out there are some clever ways an incoming current of 60 Hz frequency can be changed, especially lowered for our purposes, without affecting the other characteristics of the current too drastically. The way this is done is probably not critical for our needs, but what is important

is that **lowering frequency some percent lowers motor speed the same percent.**

- Why is all this important? For several reasons, but from an energy standpoint, the chief one is that the horsepower of a centrifugal pump varies as the **cube of the speed**. What that means in practical terms is that if you have a 100 hp pump currently requiring 80 kW to operate and you cut the speed to 50%, the horsepower is reduced to $(0.5)^3$ or 12.5%. **Thus the kW required is potentially reduced to 10 kW.** Unfortunately, because of some losses in the frequency reduction process, the real savings aren't quite that good, but still substantial.
- What's the downside? The only one I can find is cost. Haven't been able to get too much cost info, but it looks like the installed cost may bounce around \$100/horsepower. That's sure significant, but not impossible.
- Let me leave you with this thought If you don't pay your electric bill, will you be delighted???? Till next month

More About Variable Frequency Drives

In the last issue we introduced the subject of variable frequency drives (VFDs) and covered some basics about these versatile devices. I have continued to review material on this subject and think a few additional things are worth sharing. First though, remember that from an energy standpoint, if you reduce the speed of a pump, the **horsepower may reduce by as much as the cube of the speed**. The potential energy savings are large.

- Fortunately, energy savings are not the only benefits VFDs offer. A key additional advantage is their ability to soft start motors with resultant energy savings and reduction of water hammer. The main downside to this application is cost. VFDs are significantly more expensive than traditional soft starters.
- A principal consideration in making a choice between VFD motor starting and traditional soft start devices is whether your load varies. With traditional soft starters, once the motor reaches full load speed it remains at that speed, whereas, with VFDs the speed can be varied with load or demand.
- Are there downsides to VFDs other than cost? Sure - one of the principal ones is that they can introduce undesirable harmonics into the electric circuit of an installation. However, this can be corrected and ultimately is reflected in the cost of the VFD.
- If you'd like to know if your system would benefit from

VFDs, what are some of the things you should consider? Here are a few and if you answer yes to any, you probably need to at least investigate VFDs: (not an exhaustive list)

1. Are your pumps and motors over sized? For example, do you have pumps that operate for relatively short times to meet water demand?
 2. Does your water demand vary significantly over time?
 3. Are you having power factor problems?
 4. Do you have air handling situations where volume requirements vary?
- Want more information? Here are the links to a couple of web sites I found particularly helpful:
 1. <http://www.joliettech.com/>
 2. <http://www.pacontrol.com>
 - You might want to do some thinking “out of the box” and see if you come up with some unique applications for your system. The ability of these devices to match output to demand offers some intriguing possibilities. What about meeting fluctuating water demand this way rather than with an expensive tank??
 - Finally, talk about energy cost.....”Guy’s wife wanted to go somewhere expensive for their anniversary so he took her to a Texaco Station”..... Oh well -----

Concerned or curious about Power Factors? Read on

Although most of these newsletters are devoted to energy saving suggestions that cost little or nothing to implement, for the last two issues we’ve been talking about variable frequency drives (VFDs) which do cost serious bucks but can have serious benefits. Another area somewhat in the same category is power factor correction. Although most of the systems I work with don’t get involved with power factors, I seem to be encountering it more frequently and thought we ought to spend an issue or two on it although it’s a bit difficult to understand.

- First of all, how do you know if you need to be concerned with power factors? Easy – just look on your power bill. On the part of the bill that details how the bill amount is calculated you are likely to see a line that says power factor or power factor correction followed by an amount. If it’s not there or the amount is zero, then don’t worry about it. You aren’t being penalized for low power factor. However, if there is an amount on the power factor line, you probably are being penalized and you’ll want to pay attention to the following:
- So, what is it? Well, basically it’s a reflection or measure of how well your motors are designed electrically. Power suppliers generally try to discourage poor design by price penalties because if the power factor is seriously low, the supplier has to supply more current to get a job done than it should have to.
- Technically, power factors are a measure of how much current lags (or leads) voltage changes in an alternating current system. If you aren’t electrically trained or inclined, that probably sounds like so much Greek, but maybe the following illustration will help some of you a bit.

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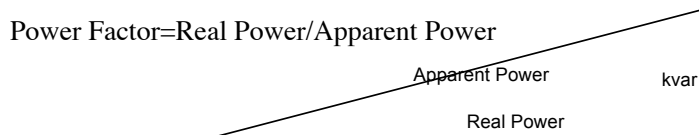

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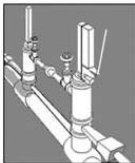


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- Try to think of electrical power as having a direction (toward the customer for example). If things were ideal, all the power supplied would be in a straight direction away from the supplier as represented by the horizontal line labeled “Real Power” in the illustration. However, with induction loads (motors) forces are generated that try to push the current back toward the supplier and the horizontal line gets raised to a slant – “Apparent Power” in the drawing. The height of this slant – “kvar” in the drawing – is a measure of the effect and the power factor is the ratio of Real Power to Apparent Power.





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THINK TANK



Send us your pictures!!!

We would like to put the water towers of Nebraska on our cover. We want to feature a different tower on each issue.

So far we have had Cass County RWD1, Louisville, Bloomfield, Litchfield, Columbus, Logan East RW, Papio-MO Dakota County, Wahoo, Hickman, Arnold, Beaver Lake and Tobias.

Let us add your name to our list and see how long it gets. Either send a photo to our office or e-mail a picture to our website.



NOTICE



An addition to this year's Western Conference events is an impromptu motorcycle ride scheduled to start at 8:00 a.m. on Wednesday, September 1. The ride will last for about 3 or 4 hours and will tour around the area. Anyone interested in joining this ride should meet in front of the Convention Center at 8:00 a.m. For further information, call Doug Woodbeck at (402) 471-0521.



CONFERENCE AGENDA

2010 Western Conference

August 31 & September 1 & 2, 2010

Tuesday, August 31, 2010 - Preconference Sessions

7:30 - 8:00	Pre Conference Registration
8:00 - 9:00	(Platte/Pioneer) Pump & Well Maintenance - 1w
9:00 - 10:00	(Platte/Pioneer) Vehicle & Equipment Maintenance - 1w
10:00 - 10:15	Break
10:15 - 11:15	(Platte/Pioneer) Valve Maintenance & Exercising - 1w
11:15 - 12:15	(Platte/Pioneer) Fire Hydrant Maintenance - 1w
12:15 - 12:45	Lunch
12:45 - 1:45	(Platte/Pioneer) Storage Tank Maintenance - 1w
2:30 - 6:00	Golf Tournament

Wednesday, September 1, 2010

8:30 - 12:00	Trap Shoot
10:00 - 1:00	Conference Registration
12:30 - 2:00	(Oregon Trail) DHHS Regularory Update - 1w
2:00 - 2:30	Break
2:30 - 3:30	(Oregon Trail) AWWA Operator Survey Results - .5w
3:30 - 4:00	Break
4:00 - 4:30	(Oregon Trail) USDA Update - .5w
4:30 - 5:00	(Oregon Trail)
5:00 - 6:00	Social Hour
6:00 - 7:00	Banquet and Awards

Thursday, September 2, 2010

6:30 - 7:30	Breakfast
7:00 - 8:30	Conference Registration
7:30 - 8:30	(Oregon Trail) Proper Sampling Techniques - 1w (Platte/Pioneer) Horizontal Boring - 1w, 1ww (Fire Hall) Completing DMRs - 1ww
8:30 - 8:45	Break
8:45 - 9:45	(Oregon Trail) Point of Use vs Large Treatment - 1w (Platte/Pioneer) NeWARN Web Page - 1w, 1ww (Fire Hall) Cross Connection Control Program Evaluation - 1w, 1bf, 1ww
9:45 - 10:00	Break
10:00 - 11:00	(Oregon Trail) Confined Space Safety - 1w, 1bf, 1ww (Platte/Pioneer) Chapter 7 Changes - 1w (Fire Hall) Cross Connection Control Program Evaluation (cont.) - 1w, 1bf, 1ww
11:00 - 11:15	Break
11:15 - 12:15	(Oregon Trail) Trenching & Shoring - 1w, 1ww (Platte/Pioneer) Public Notification / Groundwater Rule - 1w (Fire Hall) Thermal Expansion - 1w, 1bf, 1ww
12:15 - 1:15	Lunch
1:15 - 2:15	(Oregon Trail) Fall Protection - 1w, 1bf, 1ww (Platte/Pioneer) Capacity Development - 1w, 1ww (Fire Hall) Backflow Regulation Review - 1w, 1bf, 1ww
2:15 - 2:30	Break
2:30 - 3:30	(Oregon Trail) GIS/GPS Mapping - 1w, 1ww (Platte/Pioneer) Valve Insertion - 1w (Fire Hall) Backflow Quiz Bowl - 1w, 1bf, 1ww
3:30 - 3:45	Break
3:45 - 4:45	(Oregon Trail) Wellhead Protection Planning - 1w (Platte/Pioneer) Water License Renewals & Regulatory Reference - 1w (Fire Hall)



Another 25 Interesting Facts About Water

By Russ Topp, Circuit Rider

Once again it's time to come up with a topic to write about for the Good Water News magazine. As I look outside it's raining again. It hasn't been that many years ago everyone was talking about the drought. Lake McConaughy was all but dried up; Harlan County Reservoir was in the same shape. As a matter of fact Jerry Dietz, the Water Operator from Alma, informed me during one visit that they had outlawed water skiing on the west end of the lake! I said why did they do that? He said it was raising too much dust! (You have to know Jerry) Everyone was worried about their wells drying up. This past winter most of the state was covered up with snow. When spring finally came the farmers had a tough time getting the planting done due to wet weather. June came around and the northeastern part of the state experienced a considerable amount of flooding. Harlan County Reservoir is full and Lake McConaughy is almost full. What a difference a few years can make. I hope we will continue to see timely rains throughout the summer months. With all the water we have seen lately I thought I would search the internet to find some interesting facts about water.

1. It takes 2,072 gallons of water to make four new tires.
2. To manufacture a new car it takes 39,090 gallons.
3. Water regulates the earth's temperature.
4. A human can survive more than a month without food but only a week without water depending on conditions.
5. In one day a tree gives off 70 gallons of water through evaporation.
6. One acre of corn evaporates 4,000 gallons of water per day.
7. There are approximately one million miles of water pipes in the U.S. and Canada. That is enough to circle the earth 40 times.
8. The first water pipes were fire charred bored logs.

9. An average five minute shower uses 25 to 50 gallons of water.
10. There are approximately 56,000 public water supply systems in the U.S.
11. 80% of the earth's surface is covered by water.
12. 97% of the earth's water is in the oceans or seas.
13. 1% of the earth's water is suitable for drinking.
14. It is possible to drink water from the dinosaur era.
15. 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 earth's atmosphere.
16. It would take 219 million gallons of water to cover one square mile with one foot of water.
17. It takes 27,000 gallons of rain water to get one inch over one acre.
18. 66% of the human body is water.
19. A tomato is 95% water.
20. An elephant is 70% water.
21. An ear of corn is 80% water.
22. It takes 1,500 gallons of water to process one barrel of beer.
23. It takes 24 gallons of water to make one pound of plastic.
24. To refine a barrel of oil it takes 1,851 gallons of water.
25. To produce one ton of steel it takes 62,600 gallons of water.

Nebraska Rural Water Association

EARLY REGISTRATION

Western Nebraska Fall Pre-Conference and Conference

August 31—September 2, 2010

Gering Civic Center

1050 "M" Street

Gering, Nebraska

Name (One (1) person per form) _____

Certificate numbers must be included: Water # _____ Grade 6# _____ WW # _____

System/Company Name _____

Address _____

City, State, Zip _____

DAYS ATTENDING	MEMBER	NON-MEMBER
PRECONFERENCE—August 31—NO REGISTRATIONS AFTER AUGUST 24	_____ \$35.00	_____ \$50.00
FULL CONFERENCE WITH PRECONFERENCE	_____ \$125.00	_____ \$150.00
FULL CONFERENCE (includes all meal tickets)	_____ \$100.00	_____ \$125.00
WEDNESDAY ONLY—includes Banquet	_____ \$60.00	_____ \$85.00
THURSDAY ONLY—includes breakfast buffet and lunch	_____ \$60.00	_____ \$85.00
GUEST BANQUET TICKETS— \$15 x _____	TOTAL \$ _____	TOTAL \$ _____
GUEST LUNCH TICKETS—\$10 x _____	TOTAL \$ _____	TOTAL \$ _____
GOLF TOURNAMENT ON TUESDAY AFTERNOON	___ YES	___ YES
TRAP SHOOT ON WEDNESDAY MORNING	___ YES	___ YES

Meals are included with the conference registration. The Civic Center needs a count prior to the conference. PLEASE INDICATE WHICH MEALS YOU WILL BE STAYING FOR:

**REGISTRATION DEADLINE IS AUG 24.
AFTER THIS DATE, YOU WILL HAVE TO
REGISTER AT THE CONFERENCE.
FEE AFTER THIS DATE INCREASES \$50.**

___ Wed night ___ Thurs lunch

TOTAL DUE \$ _____

Registration fee for licensed water operators of eligible public water systems may be reimbursable by NDHHS. Eligible systems are community & non-transient non-community systems serving 3,300 or fewer people.

If eligible include PWS ID# NE31- _____

BILL ME _____ CHECK ENCLOSED # _____ PO # if applicable _____

Non-members not eligible for reimbursement—check must accompany registration form.

To Register:
 Call: 800-842-8039 or 402-443-5216
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When making room reservations,
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Providing Safe Drinking Water through Wellhead Protection

By Mike Lucas, Sourcewater Specialist

A safe drinking water supply for our communities is extremely valuable. We now know that safe drinking water from groundwater can no longer be taken for granted. Groundwater and surface water supplies can be contaminated from many manmade causes or practices, such as, landfills, waste lagoons, the use of pesticides and fertilizers, chemical spills, septic systems, leaking underground storage tanks, manure spreading, junkyards, improperly abandoned wells, pipelines, improperly constructed wells, mining activities, etc. The costs of dealing with contaminated drinking water can easily run into the millions of dollars. It is said that one gallon of gasoline can cause one million gallons of water to be unusable for human consumption. Because groundwater generally moves slowly, contamination may not be discovered for years. Once the contaminate source is eliminated the cleanup of the water supply can be extremely expensive if not impossible. Alternative water sources or treatment may be an option but again at great additional cost. Wellhead protection is the least costly alternative and generally focused on preventing the initial contamination. Often referred to as "wellhead protection plans" they may be more accurately considered to be "wellhead or source water protection programs." As opposed to a plan that is developed and then shelved waiting for the time it is needed, the management program is a living, dynamic effort to mitigate the risk to public health and invest in safe, community drinking water. Through this program the community stakeholders manage potential contaminates within the recharge area of their water sources.

5. Plan for the future including long-term plans for alternative water supplies if contamination occurs.
 - The final plan is reviewed and approved by the Nebraska Department of Environmental Quality.
 - Throughout the program development and management efforts, the public must be informed and included.

In future articles we plan to spotlight individual community wellhead/source water protection efforts. For help developing a program, contact: Mike Lucas NeRWA (402) 443-6157

For Source Water Protection Grant Information, contact: Mary Schroer NDEQ (402)471-6988

NDEQ Wellhead Protection Coordinator, Ryan Chapman (402)471-3376

The Five Step Process for Wellhead Protection

1. Form a community planning team to initiate and implement a wellhead protection program.
2. Delineate the wellhead protection area.
3. Identify and locate potential sources of contamination.
4. Manage the wellhead protection area. Management techniques can vary widely depending on economic, industrial and political conditions in the community.

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More Information
Coming Soon!!



Time is Flying By!!!

By Ken Widhalm, ARRA Circuit Rider

At this time of writing it is July already. It seems the first three months that I have been a NeRWA Circuit Rider have gone by fast. That's the way it seems when you're having fun.

I really don't have any one "Special Topic" to report on, but I can tell you this, I have really enjoyed visiting the parts of the state that I haven't seen before. I know why we have a great state. All of the communities, big and small, play a major role in this state's heritage. More important are ALL the OPERATORS of all the cities and villages. You folks are the people that make it all happen.

I have really enjoyed this position with NeRWA and I look forward to the upcoming months. I have spoken to and met with a lot of operators, clerks, board members, etc. from different areas of the state, and I still have a lot of people to meet. My goal is to try and make contact with every community under a population of 10,000 before Nov. 1, 2010.

I have learned a lot. It seems like I pick up something new every day. It is interesting to share experiences with operators and I have found out some things that were new to me, also. Finding out ways for a quick and easy fix are the things that I try to pass along. For instance, if your system has a fire hydrant that will not drain back after operated, give me a call at 402-380-1424, or call Don Christen at Burwell. We know the solution that works. It's like cleaning a coffee pot.

I have been busy trying to get the valve exercise machine

towards the east end of the state. We have several towns that want to take advantage of it as it is coming through and that also saves running it back and forth across the state. After transporting it to an area, I get it started at one town and when they are finished with it, they can work with the next town in the area to move it on or they can call me. So far, all the people have been very good to work with, very willing to work together to use this machine and to transport it between towns. We do have a long list of communities that want to use this machine. The NeRWA is asking for your cooperation in moving it along as quickly as possible. We know that things come up that are much more important to do, so do the best you can. A phone call gets you on the list, but you may have to wait awhile unless we can work you in when it is in your area. This machine is a neat little outfit, operator-friendly, and simple to use. Don't be afraid to call to use it or if you have questions about it.

The valve exercise machine is a very expensive machine and NeRWA is asking for a \$5.00 donation per valve. Please take good care of it. Everyone has taken good care of it so far and that is appreciated. If you have a problem, please give NeRWA a call or give me a call. Your water mains are a very important part of your system. Even valves at your wastewater plants can be very hard to operate. This machine can help ease the task in both areas.

I hope to meet and speak with a lot more of you operators, or someone connected with your village or city within the upcoming months. See you out there.

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The Benefits of SMOKING!

By Jim Heyen, Wastewater Technician

No need to alert the Surgeon General, I'm referring to the sewer smoking. With summer in full swing, this is a perfect time to tackle some of the problems you may have experienced during the cold months but didn't know where to start. The State Rural Water Association posted an article a few years ago which highlighted serious problems that could be identified by smoking the lines. For those of you looking for a way to determine the starting point or evaluating the seriousness of a problem, you may benefit from the use of the sewer smoker. For those of you stumped about where to begin your search, I have included the article in its entirety. Smoking your sewer lines might be the first.

The Benefits of Smoke Testing a Collection System

Smoke testing is one of the most efficient and most cost-effective ways to locate and identify the source of an inflow or infiltration problem. It is important to find and identify these sources because they may seriously affect the efficiency of the wastewater treatment facility and increase operating expenses. Some examples of the impact that inflow and infiltration may cause are:

- Pump station handling large volumes of unnecessary water
- Hydraulic overloads that greatly reduce system efficiency
- Increased operating expenses due to the processing of ground water and storm water that do not require treatment
- Unnecessary equipment wear
- Increases collection system maintenance and cleaning

There are a few factors to consider when deciding if implementing a smoke testing program will be beneficial to your facility. For example, what ages and types of materials are used in the collection system? Many sanitary systems are 50 to 100 years old and are constructed of outdated materials. Over time, decay and roots cause breaks in the lines that will permit excessive infiltration during wet periods.

The presence of undesired connections such as basement and yard drains, catch basins, cross connections from storm sewers, foundation drains, and roof downspouts will cause elevated flows every time it rains. The easiest

way to tell if this exists in your collection system is to have a look at the plant's influent flow meter.

Smoke testing is a very quick and easy way to determine if buildings are properly connected to your system. Smoke should exit the vent stakes of the surrounding properties within the testing area. If traces of the smoke or its odor enter the building, it is an indication that gases from the sewer system may also be entering. Smoke that enters a building can cause panic and stress to an unsuspecting individual. This will require some good public relations skills and allow for an opportunity to stress the importance of correcting the problem. Remind citizens that the smoke entering their building is their friend. If smoke is entering their home or business, DANGEROUS gases could be entering as well. The smoke that is manufactured specifically for testing is not dangerous or toxic, leaves no residuals or stains, and has no effects on plants or animals. It has a distinctive, but not unpleasant, odor. The visible smoke and odor will last for only a few minutes if there is adequate ventilation. SEWER GASES ARE DANGEROUS! A few of these gases have no odor and present the most serious problem because they can enter a building undetected. These gases can cause anything from minor illness to death. Identifying and correcting the source of any smoke entering a building is urgently advised.

In the end, if the situation is handled properly, the property owner is usually grateful for the assistance and information that you provide.

Smoke testing can also be very useful in locating "lost" manholes. Although collection systems can cost millions of dollars, they are often the first thing to be neglected when there is a decrease in funding and staffing levels because they are out of sight and out of mind until a problem occurs.

POSSIBLE CAUSES FOR SMOKE ENTERING A BUILDING:

- The vents connected to the building's sewer lateral are inadequate, defective, or improperly installed.
- The traps under sinks, tubs, basins, showers, floor drains, etc., are dry, defective, improperly installed, or missing.

continued on next 2 pages

- The pipes, connections, and the seals of the building's sewer system are damaged, defective, have plugs missing, or are improperly installed.

In my opinion, the biggest benefit of conducting a smoke testing program is the high visibility and learning opportunities for the staff as they go into the collection system for a few days. The public, in general, has a preconceived notion that wastewater plant operators don't do much. Make sure to seize the opportunities that arise while conducting this testing to explain what you are doing. You will be surprised at how grateful they are! Staff will also be provided a great chance to familiarize themselves with the design, function, location, and the condition of the collection system, which they seldom get the chance to see.

HOW DOES SMOKE TESTING WORK?

Smoke testing is conducted by placing a blower over a centrally-located manhole and forcing non-toxic smoke-filled air through a sewer line. Depending on the equipment being used, the smoke will be generated by lighting a smoke bomb or utilizing liquid smoke. Using liquid will generally cut your labor costs. The smoke under pressure will fill the main line and any connections. It then follows the path of the leak to the ground surface, quickly revealing the source of inflow and infiltration. Only enough force to overcome atmospheric pressure is required.

After placing the blower and filling the lines with smoke, staff must perform a visual inspection of the area being tested. When using liquid smoke, you control the time you want it to run. Typically, you will let the smoke run until the crew has had ample time to do a thorough inspection. The field crew should include a minimum of two people.

Check all connected lines, including abandoned and supposedly disconnected service lines. Do not rush, because minor leaks can easily be overlooked. It is important to carefully check around houses, with close attention given to cleanouts and roof leaders. It is not uncommon to see smoke coming out of the grass, wooded area, or cracks in the pavement. If smoke is found during the inspection, it must be carefully recorded so that it can be corrected after testing. Cameras make the job easier. A picture will help you relocate the problem after testing so that you can take corrective measures. It is also proof that the leak was found.

Blocking off a sewer line should not be necessary except when isolation is important. As long as openings exist for the smoke to follow, smoke tests are effective, regardless the surface type, soil type and the depth of the lines.

The best results are obtained when the water tables are low and the days are dry because water is an excellent vapor

barrier. Smoke testing should also be avoided on windy days because even a very light breeze can disperse a wisp of smoke before it is visible at the source of a leak.

PREPARING TO SMOKE TEST

Smoke testing may involve many hours of labor. It has the potential to affect the occupants of all buildings connected to the collection system, disrupt traffic, and cause people to summon Emergency Personnel; therefore, advance preparation is essential to a successful smoke testing program.

You should obtain a comprehensive map with street names, addresses, and the overall picture of the area to be tested. This map will show where the manholes are and which direction the lines flow. It will also show where there are force mains, storm drains, and any other items of importance. This is an excellent map on which to include your notes. Good notes will prevent delays on the job. Manholes to be used for blower placement should be predetermined and accessed prior to commencing the test. This will save a tremendous amount of time. When choosing the manholes to use, always try to avoid busy intersections because creating a detour or closing an intersection will upset some drivers, causing dangerous situations.

NOTIFICATION PROCEDURES

Obtain a list of all property owners in the surrounding area of the vicinity that you have chosen to test. The people who do the billing are usually very helpful. Approximately two weeks before starting the test date, you must send the property owners a notification letter that includes all information that is pertinent to the homeowner. This letter should be similar to the following:

Dear Resident:

The Water Pollution Control Facility (WPCF) anticipates conducting four days of leak tests in the sanitary sewer system beginning DATE. A non-toxic smoke will be blown into the system to reveal leaks that allow stormwater and other surface waters to enter. Locating and correcting these leaks will conserve expensive capacity at the treatment facility. A video record of leaks will be made.

The smoke manufactured specifically for this purpose, leaves no residuals or stains, and has no effects on plants or animals. It has a distinctive, but not unpleasant odor. The visible smoke and odor last only a few minutes if there is adequate ventilation.

The smoke should not enter your home; if this does occur, any of the following could be the cause:

- *The vents connected to your building's sewer lateral*

- are inadequate, defective, or improperly installed.
- The traps under sinks, tubs, basins, showers, floor drains, etc. are dry, defective, improperly installed or missing.
- The pipes, connections, and seals of the building's system are damaged, defective, have plugs missing, or are improperly installed.

During the week prior to DATE, pour water down ALL drains in your home or building to ensure that traps are full.

If traces of the smoke or its odor enter your house or building, it is an indication that odor from the sewer system may also be entering. This can be unpleasant, dangerous, and a potential health hazard. The location, identification, and correction of the source of any smoke entering your house are urgently advised.

The WPCF can provide assistance in locating the source of smoke entering your house; however, correction of any defects in the pipes and sewer on private property is the responsibility of the owner. If smoke is observed in your home and the source is not readily identified, or if you have any questions, please call PHONE NUMBER.

Sincerely,
Superintendent

A news release and smoke testing CAUTION LETTER should be sent out to the media and other officials to let them know your plans. This is usually done one week in advance. The news release should include the days and exact locations, why you are doing the test, and where they can expect to see smoke. List your phone number for questions. Remember that this is just a reminder. Your notification letter should have covered all of the necessary details. The reminder should be similar to the following example:

**“SMOKE TESTING OF
THE SANITARY SEWER SYSTEM”**

The Water Pollution Control Facility inspection crew will be conducting a survey of the sanitary sewer system. The survey will involve opening manholes in the streets and easements. A non-toxic smoke will be blown into the sewer mains to locate breaks and defects in the sewer system. The smoke that may be seen coming from vent stacks on buildings or holes in the ground is non-toxic, harmless, and creates no fire hazard. The Smoke should not enter your home, unless the plumbing is defective or drain traps have dried up. If you have any seldom-used drains, pour water into the drain to fill trap.

If smoke should enter your home or building corrections of the defects on private property are the responsibility of the

continued on page 26

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of the owner. A licensed plumber should be consulted to ensure the corrections are properly made. If smoke is observed, you may contact a member of the survey crew working in your area. They will be pleased to assist you in identifying the source of the smoke.

Some sewer mains and manholes may cross property line easements or other rights of way. Whenever these lines require investigation, the crew will need access to the sewer mains and manholes. Clearing of some easements to facilitate access may be performed prior to the survey.

Video records or photographs are to be made of leaks that are found. The survey should begin on DATE and require four days for fieldwork. If you have questions or observe smoke in your home, please call PHONE NUMBER.

Advance notification allows anybody with special requirements, such as health concerns, enough time to inform you of their situation so that necessary arrangements can be made. Don't forget to include any concerns with your notes.

COMMENCING THE SMOKE TESTING

Before beginning each day of the smoke testing, be sure to call Dispatch and/or Fire Department to inform them. They also need to be informed when you are finished for the day. Even with all of your preparation, you will undoubtedly get a panic call sooner or later. The

emergency personnel in your area need to be aware of this so they can tell a panic call from a real emergency. A truck that has been stocked with all the necessary equipment and materials prior to the morning of the project will once again save valuable time in the field.

CONCLUDING A SMOKE TEST

All of the notes, pictures, and findings accumulated in the field should be put into a comprehensive report summarizing the smoke testing work.

Send a letter to all property owners who need to do repair work. Be sure to cite the rule or sewer use ordinance that is being violated. Give them all the information they need to do the repairs, such as permits required, repair methods, and a phone number that they may use to obtain any further information. Be sure to set a time limit and always do a follow-up inspection.

This article has been compiled with information obtained from Hurco Technologies, Inc., Town of Simsbury WPCF, and various short articles written by State Rural Water Association Wastewater Technicians.

If your township is experiencing any of the problems discussed in the above article and are interested in scheduling a smoke test, please contact our office to arrange an appointment at (800) 842-8039.



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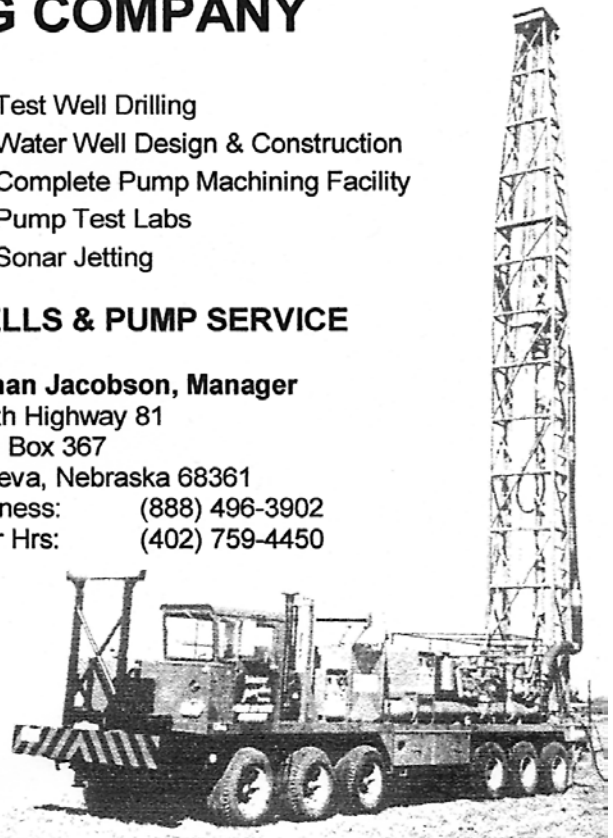
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