

Wisconsin **Rural Water** **Journal**

Summer 2023

Constructive Criticism
Issues with Leaking Valves
Fire Flows
What is TMDL?
Water Storage Facility Inspections

WRWA
Outdoor
EXPO
2023



Water Treatment Chemicals, Equipment and Local Service

800.328.5460

email: wtg@hawkinsinc.com

St. Paul, MN
651.730.1115

Fond du Lac, WI
920.923.1850

Superior, WI
715.392.5121

Scan this QR code to see
the Hawkins video.



*Customized solutions by a
professionally trained team.*

SERVICE

- Mini Bulk Delivery
- Equipment Installations
- Laboratory Testing

WATER TREATMENT

- Potable Water
- Wastewater Treatment
- Collection Systems

EQUIPMENT

- Chemical Injection Pumps
- Chlorination Control
- Chemical Feed Equipment



Now Hiring for Sales & Service!

Visit www.hawkinsinc.com/careers for current openings and locations

Tackle more with less.

The Monroe SnowFighter helps municipalities across the country tackle year round challenges. Use the SnowFighter for year round application - plow, dump, spread, and haul with one body. The best part? No CDL is required to operate, so you can get to work right away.



monroetruck.com



monroe

a brand of aebe schmidt



In Every Issue

- 2 Message from the President
by Dean Bergstrom
- 3 Message from the Executive Director
by Chris Groh
- 4 Letters & E-mail
- 7 WRWA Corporate Gold Members
- 13 WRWA Membership and Advertising Rates
- 36 WRWA Business Members
- 40 WRWA System Members
- 46 WRWA Corporate Members
- 52 WRWA Calendar
- 53 Advertiser's Index

FEATURES

- 6 Constructive Criticism
by Kelly Thomas
- 8 Issues with Leaking Valves
by Annetta Von Rueden
- 10 How Will I Know
by Kay Curtin
- 14 Fire Flows
by Todd Weich
- 15 OTM-NN Small System Sampling requirements
by George Taylor
- 16 What is a TMDL?
by Jesse Hass
- 18 Wisconsin DNR Operator Certification Exams Update
by Sam Wettach
- 20 VDS - Variable Frequency Drives
by Dan Wundrow
- 22 Analyzing Nitrate Trends in Wisconsin
by Andrew Aslesen
- 24 Why Won't We Change?
by Vince Matarrese
- 27 **WRWA Outdoor EXPO 2023**
- 32 How to Inspect Your Water Storage Facility
by Seth Petersen
- 34 A Day in the Life of a Wastewater Operator
by Tony Roche
- 42 Up the Creek
by Ken Blomberg

OFFICIAL PUBLICATION OF THE WISCONSIN RURAL WATER ASSOCIATION

WRWA Staff: Chris Groh- Executive Director
 Sue Wojtalewicz- Chief Financial Officer
 Andy Aspinwall - Assistant CFO
 Andrew Aslesen- Source Water Specialist
 Kay Curtin - Wastewater Trainer
 Jesse Hass- Wastewater Trainer
 Annetta Von Rueden- Municipal Water Circuit Rider
 Todd Weich- Municipal Water Circuit Rider
 Dan Wundrow- Municipal Water Circuit Rider
 Renee Koback- Member Services Coordinator
 Tony Roche- Training Specialist
 Kelly Thomas- Technical Assistance Director
 George Taylor Jr.- SS Water Circuit Rider
 Seth Petersen - Training Specialist

WRWA STATE OFFICE

PH: 715-344-7778 • FAX: 715-344-5555
 E-Mail: wrwa@wrwa.org • Website: www.wrwa.org



Wisconsin Rural Water Journal is the official publication of the Wisconsin Rural Water Association, published quarterly by the WRWA, 350 Water Way, Plover, WI 54467. Non-profit third class bulk mailing permit paid at Plover, WI. Copyright 2020. All rights reserved.

Contributions from operators, managers, clerks or industry are encouraged and welcome. Editorial content reflect the views of the authors and do not necessarily represent the views of the Wisconsin Rural Water Association.

Address all letters to the editor, advertising inquiries and correspondence to:
 Wisconsin Rural Water Association, 350 Water Way, Plover, WI 54467.



Message from the President

Dean Bergstrom,
WRWA President, Cumberland

As I write this message, we are already past the summer equinox and the summer days are now getting shorter as we move forward. It's hard to believe that with all the snow that Wisconsin received this past winter, that we could be so dry during the month of June already. Yards are burning up due to the lack of moisture. Hopefully things turn around soon!

The WRWA Board of Directors recently met for our annual board retreat/reorganizational meeting. At the meeting, we always look deeply into the long-term planning, future goals and the financials of the organization. One of the big topics was the recent purchase of more property to the west of the current WRWA office. In the future, we plan to clear the property and make more area for our annual outdoor expo event. Unfortunately, it will not be ready for this year's event, which is August 24, 2023, but it will hopefully be ready for us to utilize in 2024. We are excited for the opportunity to expand the outdoor expo in the future.

I hope you are all hitting your projects head-on this summer and able to complete them before winter is upon us. As always, if you need any assistance, please don't hesitate to call your WRWA circuit rider, as they are always there to help. Until next time, stay cool and stay safe!

Dean



**Safe Drinking Water
is a Basic Need.
We Can Help.**

Water systems designed for communities and the people who live in them



Kunkel Engineering Group

107 Parallel Street • Beaver Dam, WI • 53916
920-356-9447 (office) • 920-356-9454 (fax)
www.kunkelengineering.com

WRWA BOARD OF DIRECTORS

President

Dean Bergstrom
Cumberland (District 4)

Vice President

Hershel Marks
Boscobel (District 5)

Secretary/Treasurer

Gene Larson
Hixton (District 3)

National Director

Kevin Mraz
Algoma
Sanitary District No. 1 (District 2)

Past President

Ramon Knudtson
Melrose (District 3)

Board Members

Kyle Gruetzmacher
Clintonville (District 1)

Chris Jensen
Birnamwood (District 1)

Tom Tietz
Cambria (District 2)

Steve Bein
North Fond du Lac (District 2)

Rob Nelson
Mauston (District 3)

Bill Miller
Bloomer (District 4)

Larry Gates
Prairie du Chien (District 5)



WRWA Mission:

Assisting, educating
and representing
our members in the
Water & Wastewater
Industries.



Chris Groh,
WRWA Executive Director

Message from the Executive Director

Summer 2023

Summer is the time for vacations, but it is also time for most of the work you do all year. Hopefully you are not getting on a lawnmower this Summer when you should be looking into maintenance of your water and wastewater systems. The lack of construction projects this year can be alleviated by doing the background work on funding, planning, inventories and other things that need to be done before projects get started. It is pretty hard to do those things from the seat of the mower or while trimming the cemetery. Those are things that are also important, but your skills would be vastly underused if that's happening.

PFAS testing is happening now for most of you. Get those samples in early so when you get your results, you can proceed with the next steps. If you have no hits, quickly go to your DNR rep and get your further PFAS monitoring tests waived. That short bit of work will save hundreds of dollars of testing expense. If you get a hit of PFAS, but it's under the state limit, you most likely may have to continue testing. Again, contact your DNR rep to see what the next step is. In this instance you will also have to

develop a response to your customers on what that low result means to them. Customers could react from "OK, I don't care then" to "I don't want any at any level." You and your counsel's ability to explain the situation will determine how this goes.

The lead and copper rule inventory due date is coming up quick. This is really no joke and you should be working on this inventory to the exclusion of other things. If you don't know how to get started, please call your Rural Water Circuit Rider and they will get you going. If you are totally not able to get started, you can contact one of our partners, like 120Water, who can help you get going or totally do the inventory for you. There are many levels of help and it's all available for you.

Summer is for vacations, but it can be a busy time too. If you tackle your chores in Summer, you will be less busy in winter while plowing snow, shoveling snow, blowing snow and salting the icy sidewalks around town. Maybe you want to take your vacation in Winter, maybe someplace where there is no snow?! *Chris*

If it involves water, MSA Professional Services has the expertise to address it.

Big or small, we do whatever it takes to meet each need, working to make Wisconsin municipalities stronger in the process.

When you partner with MSA, it's more than a project. It's a commitment.

Let's start a conversation.

www.msa-ps.com | (800) 362-4505

**FRESH LOOK. EXPANDED CAPABILITIES.
SAME DEDICATION TO YOUR SUCCESS.**





We get letters and emails!

We'd love to hear from you...

To WRWA staff,

I attended the training for Lead and Copper Rule Revisions Updates and PFAS/PFOA sampling on April 18, 2023, in Hilbert WI. The training was excellent and prepared me for the next years of sampling for our school at Zion Lutheran of Morrison. The class was very interactive, and all of my questions were answered by the instructors Kelly and Tony. The instructors even offered to come out to our site if we have any issues.

Thank You,
Stephen Gifford, Drinking Water Operator
Zion Lutheran School of Morrison

The Village of Withee would like to express our appreciation for the WI Rural Water Association as we dealt with the unexpected passing of our long-time Director of Public Works, Troy Hatlestad, on 12/29/2022. He was the sole operator of our water plant and ran the public works department with only a part-time summer employee. We had no emergency plan for that situation.

I emailed Chris Groh, Executive Director, that morning and within a couple of hours, Circuit Rider, Todd Weich, and Energy Efficiency Circuit Rider, Dan Wundrow, were scheduled to come to Withee to assess the situation and help plan how to cover the plant. They put us in contact with the City of Owen's DPW, Chad Smith, who with the City of Owen's council approval, agreed to oversee our water plant and file the DNR paperwork until we could hire a new DPW. Todd continued to check in on the plant, came to our Board meeting to give input, and helped construct the DPW job position ad. Dan helped run our SCADA computer system, figured out how the reports were done, and continued to advise also. We are probably not aware of every way they helped, but the main message is that they were there in our time of need.

Words cannot express how thankful we are for everything they did.

Sincerely,
Ellen Niemi, Clerk/Treasurer, Village of Withee

To whom it may concern,

This letter is regarding the information, help and guidance I received from the Wisconsin Rural Water Association. More specifically from one of their circuit riders, Annetta Von Rueden.

She has been on site many times for the Village of Necedah. She has shared the knowledge of how to properly take specific water samples as well as how to correctly fill out the required paperwork for these samples. She assisted us with locating the source of water loss as well. Most recently, I have received help from her with the Consumer Confidence Report. This was knowledge and options I otherwise would not have had access to. I am fairly new to my position and find this type of sharing of information and knowledge irreplaceable.

Sincerely,
Jon Hanson
Village of Necedah Public Works Coordinator

Kelly,

I just wanted to thank you for stopping out and giving us a refresher on the whole water sampling process. I haven't had to organize one for a larger business in a while, so it was very helpful. It seemed a little overwhelming at first trying to make sure I had all the correct tests by the correct date. Showing me how to navigate the website will definitely help me out with that.

You were able to capture my attention on a subject I typically find a bit boring (sorry), so kudos. Thanks again!!

Thanks,
Andrea Clapp
Carney Contracting

Dear Chris & Board,

Wanted to thank you all for the tremendous honor in receiving member business of the year. Very humbling to receive something that big after 50 years of doing this. Great to know we're still assisting customers through training and our fiduciary approach to each job.

Thank you.

CTW Corporation

I contacted the WRWA as we suspected a potential leak in our water system. Our circuit rider, Todd, had us scheduled quickly and identified 2 separate leaks.

He was extremely knowledgeable, informative, and friendly. Not only did he detect the leaks but came back the day of the dig to ensure that no additional leaks were present. He is also returning with the needed equipment to teach us how to repair a leaking hydrant.

We couldn't be more thankful for his help and guidance.

Casey Vold

Land O' Lakes Sanitary District

GOLF OUTING WINNERS



A special thanks to all for making this event possible!

TEAM:
First Waterworks
Rick Viviani
Chris Mirwald
Dylan Shultz
Derek Baker

BADGER LABS

ANALYTICAL TESTING



- Wastewater
- Groundwater
- Drinking water
- Solids/Hazardous Waste

CLIENT PORTAL



- Data Export To Multiple Formats
- Access To Reports
- Project Notifications

FIELD SERVICES



- Pretreatment/Surcharge Sampling & Consulting
- Groundwater Sampling
- pH/Flow Monitoring




Since
1966

WWW.BADGERLABS.COM

NEENAH
800.776.7196

GREEN BAY
920.434.6741

STEVENS POINT
715.544.4900



CONSTRUCTIVE CRITICISM (SANITARY SURVEYS)

By Kelly Thomas

Be sure to review your prior sanitary survey report (from 3 years ago) and be sure that you have corrected any previous deficiencies.

Doctor's appointments and dentist appointments. These appointments are always something a person likes to put off because of the anxiety thinking about the potential outcome. In many cases, these appointments are scheduled in advance. If you are heading to the doctor's office already "knowing" that the doctor is going to tell you to drink less, quit smoking, and exercise more... why don't we just do it, so the doctor does not have to tell us to do those things? The dentist may tell you to brush and floss more often. But you already knew that.

As a society, we dislike being told to do the obvious things that we know we should already be doing. However, for some, it takes professional advice to spark us into making better life decisions. Sometimes we need to be told that if you do not take care of yourself or "maintain" yourself, your body may start to break down.

Unlike annual doctor and dentist appointments, DNR sanitary surveys are triennial (every 3 years). In fact, Section NR 809.35, Wis. Adm. Code, requires the DNR to perform sanitary surveys at municipal drinking water systems at least once every three years. But like doctor and dentist appointments, these appointments are made prior to the arrival of the DNR for inspection.

The DNR will evaluate the technical, managerial, and financial aspects of your water system. They will likely request to visit every component of your water system, including wells, pumping stations, treatment plants, water storage structures, and booster stations. Be ready to take the DNR inspector on a "tour" to each location requested no matter the weather conditions. The inspector will likely review your daily routine and maintenance records, monitoring protocols, ordinance implementation and financial reports. Be sure to have any other staff available who can answer questions to satisfy the DNR requests. Save some time on inspection day by gathering all the paperwork and other information that the DNR inspector may request ahead of time.

Be sure to review your prior sanitary survey report (from 3 years ago) and be sure that you have corrected any previous deficiencies.

At the end of "inspection day," your DNR rep will discuss the results as well as a plan and timetable for correcting any noted deficiencies.

Please don't wait to be told "how to operate" your own water system every 3 years at your sanitary survey. Take what you have learned from previous sanitary surveys and convert that knowledge to your general operating practices. Continued maintenance and record keeping go a long way in maintaining every capacity of your water system.

If you fear that you may not be “ready” for a sanitary survey, contact your WRWA circuit rider and request them to conduct a mock sanitary survey for you. Be prepared for our circuit rider to offer constructive criticism of how to survive the sanitary survey. This unofficial survey is a service we can provide for no fee.

*Here are some terms the DNR uses that you may find on a sanitary survey report:

“Significant Deficiencies” indicates noncompliance with one or more Wisconsin Administrative Codes and/or represents an immediate health risk to consumers. This includes, but is not limited to, defects in design, operation, or maintenance of a public water system. It also includes a failure or malfunction of or issue with the water source or the treatment, storage, or distribution system that the department determines is introducing contamination into the water delivered to consumers or that is posing a health risk to consumers.

“Deficiencies” are problems in the drinking water system that have the potential to cause serious health risks or represent long-term health risks to consumers. These deficiencies may indicate noncompliance with one or more Wisconsin Administrative Codes.

“Recommendations” are intended to address problems in the drinking water system that hinder a public water system from consistently providing safe drinking water to consumers.

“Non-conforming Features” are drinking water system features that met code requirements at the time of a water system’s construction but do not meet current code. These are technically not deficiencies, but they are noted in the survey because they will need to be corrected when the system completes upgrades in the future. However, if the department determines that a health risk exists due to the non-conforming feature, the department may require correction sooner, per s. NR 811.01, Wis. Adm. Code.

Elements of a Municipal Drinking Water System Sanitary Survey

- ☐ Source
- ☐ Treatment
- ☐ Distribution System
- ☐ Finished Water Storage
- ☐ Pumps, Pump Facilities, Controls
- ☐ Monitoring and Reporting
- ☐ Water System Management and Operations
- ☐ Operator Certification

Stay safe. Stay healthy. —*Kelly*

*DNR Document: “Preparing for a Municipal Drinking Water System Sanitary Survey”

CORPORATE GOLD MEMBERS



Civil + Municipal Engineering

Funding Assistance | Municipal Engineering
Streets + Utilities + Lighting | Wastewater
Water Supply + Distribution

800.666.3103
www.AyresAssociates.com

Eau Claire | Green Bay | Madison | River Falls | Waukesha



Northern Lake Service Inc.
ENVIRONMENTAL ANALYTICAL LABORATORY

Certified for PFAS Testing

- Drinking Water, Wastewater, Groundwater
- Soil, Sludge and other Matrices
- SOC, VOC, IOC Analyses

1-800-278-1254 | clientservices@nlsllab.com | www.nlsllab.com

Great People. Trusted Results.®
A complete source for all of your analytical needs.



B&M Technical Services
Water and Wastewater Process Control

Quality Service
Affordable Solutions

364 Industrial Drive · Coloma, WI 54930
Office (715) 228-7604 · Fax (715) 228-3418
http://www.bmtechservice.com



MSA
PROFESSIONAL SERVICES

(800) 362-4505
www.msa-ps.com

APPLETON | BARABOO | BEAVER DAM | MADISON | MARSHFIELD | RHINELANDER | RICE LAKE



Issues with LEAKING PIPES



Annetta Von Rueden,
WRWA Water Circuit Rider

There are several leak detection practices depending on costs and availability of equipment.

It is tough out there. The cost of everything keeps increasing with no end in sight. At least for the imminent future. Operating and managing a water utility must be accomplished with strategy.

Water leaks can be a huge problem that water utilities face, costing a significant amount of money if left untreated. Leaking pipes are an industry wide problem that is as old as the industry itself.

There are several leak detection methods that allow operators to find leaks without digging. These methods range from simple techniques to high-tech options.

Finding leaks has been challenging since the day's pipes have been installed in the ground. When a pipe springs a leak, either from corrosion, poor installation, or from being struck, it may not be noticed right away. The hissing of water as it escapes from the pipe is quiet, dampened by the dirt and mud around it, covered by several feet of soil. It can take days,

weeks, more often several months before the water works its way up to the surface. Frequent observations are water bubbling up out of the ground, or landscape around the leak is much greener, surfacing through a crack in the concrete or pavement, or running down a curb line. Remember if the system is sitting on bedrock, "often times" the water will follow the path of least resistance – down. You may hear the leak, but never see it.

Water loss due to pipe leaks can cause significant impacts. It is estimated pipe leaks can run unattended for a long time before they are discovered and repaired. All of that water loss is substantial and costly to the utility.

The consequence isn't just the lost water. Substantial power resources are dedicated to pumping water. Especially pumping up to a higher elevation or higher zone in the distribution system. Power that comes with greenhouse gas costs. These associated costs can be very expensive. Usually, it's not just the cost of the water loss.

The most valuable asset of a water utility is in the infrastructure. Monitoring the pipe system on a regular basis is essential for detecting and repairing underground leaks before they develop into large leaks and possible breaks causing substantial damage is critical for maintaining a sound distribution system.

Being able to find and repair leaks quickly can also mean enhanced customer service, avoiding unexpected water disruptions in water service to the customer.

Implement a regular maintenance schedule. An effective leak detection program allows water utilities to locate leaks when they are small and haven't had a chance to cause a significant amount of damage to the surrounding area and infrastructure, driving down maintenance costs and decreasing non-revenue water loss. This is especially true where water pipes are being used way beyond their expected replacement time.

There are several leak detection practices depending on costs and availability of equipment. Methods have developed with the introduction of listening devices. Listening sticks consists of a long metal rod with a round head made up of rubber or wood. The operator places the edge of the rod onto a pipe and puts their ear to the top of the listening stick, then listens for sounds that indicate a water leak along the pipe. Another listening device is a magnet that attaches to a valve head or hydrant while the sound of a leak travels where it can be heard through earphones.

To use a correlator, sound sensors are placed onto a pipe at two points to detect and record sound given off by a leak. The correlator then pinpoints the leak by running the sound data through an algorithm that assesses the difference in the sound and frequency of each sensor.

Acoustic technology has become the most practical and reliable technique for locating and monitoring water leaks.

Efficiency comes into place with leak detection. Not only is it helpful to the planet, but there are considerable cost savings that go along with it.

If you suspect a water leak, give your WRWA Circuit Rider a call and they can come out with their leak detection equipment for an evaluation and help locate the leak.

It's all about saving money. **Annie**



Central Tank Coatings, Inc.

General Water Tower Maintenance

Specializing in Painting & Repairing Elevated & Ground Storage Water Tanks

Contracts are available for services such as Sandblasting, Painting, OSHA Updates, Roofs, Pipes, Jackets, Repairs, Annual Maintenance and Emergency Services

W: www.centraltankcoatings.com E: office@centraltankcoatings.com

22528 Canoe Road, Elgin, Iowa 52141

Kelly Koehn (Owner) 563 380 2647 | Joe Koehn (Sales Rep) 563 880 5405

Toll Free 877 530 6226 | Office 563 426 5967 | Fax 563-426-5641

CORPORATE GOLD MEMBERS



DAVY
ENGINEERING

REGISTERED ENGINEERS AND LAND SURVEYORS
MUNICIPAL AND INDUSTRIAL CONSULTANT

Davy Engineering Co.
115 6th Street South
La Crosse, WI 54601
(608) 782-3130
(608) 784-6611
www.davyinc.com

Dave Dodge
National Sales Manager

cell 414.303.7834
office 414.764.6733
fax 414.764.1494
email dave@adaptorinc.com

2151 South 54th Street
West Allis, WI 53219

adaptorinc.com

Protecting America's Water
One Tank at a Time

KIM
Engineering Inc.
WATER TOWER SPECIALISTS

klmengineering.com
651-773-5111




MACQUEEN
EQUIPMENT

EQUIPMENT | TRAINING | SERVICE | PARTS | RENTALS

(262) 252-4744
info@macqueengroup.com
MENOMONEE FALLS, WI



How Will I Know?

Kay Curtin, WRWA Trainer/Technician

Arm yourself with knowledge of your system. Find that O & M manual and learn how your plant operates. Use calibration verification frequently.

In the past few weeks, I've been called to several wastewater treatment plants that are not meeting limits, in trouble, or just plain dead. One of the first things that I ask is "What is the dissolved oxygen (DO) in the plant? DO is the most important analysis that is required for biological treatment plants, whether they're activated sludge, ponds, RBCs, membrane filtration or MBBRs. You have aerobic bacteria breaking down the waste in your plant, and they require free oxygen to survive and do their jobs. Invariably, the operators will tell me that the plant is operated by the in-line DO meters and plant automatic controls, so it surely is correct. Both the salesman and former operator Old Bob said so.

Then I brought my handheld DO meter to their plant, carefully calibrated it using temperature and barometric pressure with altitude correction and took DO readings right next to their in-line probes. The in-line meters and probes were far, far off the mark. Each time, the operators of plants that were dependent on controls using in-line probe readings had no idea how to make changes to the readings of their meters or to other automated controls of their plants. In each case, they had to call in an electronics specialist, sometimes waiting for days for their arrival.

In their defense, most were new operators that had received little or no training on their systems. The O & M manuals were nowhere to be found. They did not have hand-held DO meters and weren't allowed to purchase one as their village boards or city officials didn't think it was necessary as

there were in-line meters that ran the plant. One told me that she didn't understand why they needed operators - the plant ran itself!

One of the most important terms that you need to know as a wastewater operator (or a lab technician) is CALIBRATION VERIFICATION. This is when you use a traceable reference standard to verify the reading of an instrument. Lab technicians know that they need to verify their analyses with known standards. You need to do the same thing with the on-line instruments that are used for your plant operation. Just because your plant was started up five years ago and everything calibrated at that time, doesn't mean that it is now. Those probes reside in nasty conditions. Pushing a "calibrate" button on an in-line meter does not mean that it is calibrated. For a DO calibration table, contact me, or use the chart at https://dnr.wi.gov/topic/labcert/documents/methods/DO_Sat_Table.pdf.

As Whitney Houston sang in 1985 - "How Will I Know?" OK, so I'm once again dating myself. Google it if you must: <https://www.youtube.com/watch?v=m3-hY-hlhBg> And no, sadly, Whitney wasn't talking about DO meters. She was just a common pop star, not a wastewater star like you. But you get my point: You need to use a known reference. In the case of DO, a calibrated hand-held meter using temperature and barometric pressure with altitude adjustment. In the case of in-line pH, a calibrated hand-held pH meter, using two or more buffers to calibrate it. The same

with ORP, MLSS, ammonia nitrogen, effluent orthophosphate, or any other instruments that are used for your plant operation, especially if automation is involved. Otherwise, it's like driving your brand-new pickup (that costs more than your home) without any dashboard instrumentation. Future disaster is guaranteed.

Once we rectified the readings of the probes and started operating the plants accurately and efficiently, the problems went away. What I'm trying to point out is this: Arm yourself with knowledge of your system. Find that O & M manual and learn how your plant operates. Use calibration verification frequently. Don't trust anyone that says that something will operate itself. Go to WRWA classes, and for heaven's sake, listen to Kay and Jesse. And Whitney.

— Kay —

LEAK DETECTION & HYDRANT PAINTING

John Paalman
Services Director
920-200-2959

Services Available 24/7
25 Years of Experience



faithleakdetection@gmail.com

ClarkDietz

Engineering Quality of Life®

INTEGRATED WATER QUALITY SOLUTIONS



WATER



WASTEWATER



STORMWATER

Kenosha • Milwaukee • Wausau
clarkdietz.com

CORPORATE GOLD MEMBERS

WELL DRILLING | PUMP SERVICES | WELL REHAB | SYSTEMS DESIGN



**THIS IS
OUR
DOMAIN.**

MUNICIPALWELLANDPUMP.COM | 800.383.7412



AMERICAN

FLOW CONTROL

THE RIGHT WAY

Bud Keyes
Territory Manager

bkeyes@american-usa.com
tel 608.213.5972
fax 205.307.3969

Sun Prairie, WI 53590

www.american-usa.com



Water Well Solutions

AIRBURST
Technology

N87 W36051 MAPLETON STREET
OCONOMOWOC, WI 53066
WWW.WWSSG.COM

Lamnaflo

SPECIALIZING IN WELL REHABILITATION AND PUMP REPAIR

Process. Control. Service.

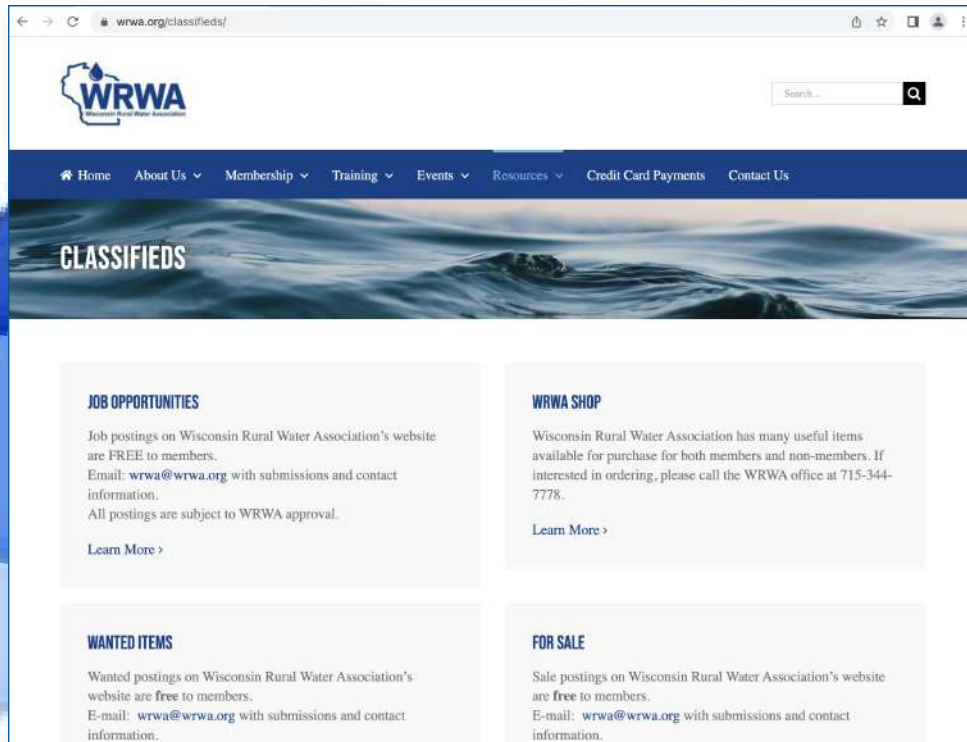
Energenecs

WWW.ENERGENECS.COM
800-343-6337

Proudly serving Wisconsin, Illinois, Upper Michigan & Minnesota.

WRWA Classifieds is now online.

Check us out: www.wrwa.org/classifieds/



YOUR PARTNER IN PROTECTING OUR MOST PRECIOUS RESOURCE

FULL SERVICE IN-HOUSE WATER & WASTEWATER SOLUTIONS

- Drinking Water
- Wastewater
- Renewable Fuels / Waste-to-Energy
- Stormwater Management
- Public Safety and Municipal Management
- Funding Strategies
- Construction Services
- Operations Services

SERVICE INSPIRED SINCE 1909



McMAHON
ENGINEERS / ARCHITECTS



920.751.4200 MCMGRP.COM
WISCONSIN ILLINOIS INDIANA

Wisconsin Rural Water Association

WRWA MEMBERSHIP (Annual Fee)

*WIP (individual)	\$45
Transient	\$65
OTM & NN System	\$155
Septage Haulers/Plumbing Co.	\$155
Less than 1,000 people served	\$330
1,001 – 2,500	\$410
2,501 – 6,000	\$480
6,001 – 10,000	\$550
Over 10,000	\$615
Associate	\$550
Corporate	\$1,540
Corporate Gold	\$2,880

JOURNAL ADVERTISING RATES

Black & White Advertising	MEMBER		NON-MEMBER	
	1-Time	Yearly	1-Time	Yearly
Full page	\$430	\$1,555	\$575	\$1,970
Half page	\$315	\$1,130	\$395	\$1,265
Quarter page	\$215	\$800	\$270	\$860
Business card	\$160	\$575	\$200	\$600

Color Advertising	MEMBER		NON-MEMBER	
	1-Time	Yearly	1-Time	Yearly
Inside front cover	\$670	\$2,430	NA	NA
Outside back cover	\$800	\$2,540	NA	NA
Full page	\$575	\$1,970	\$770	\$2,670
Half page	\$370	\$1,265	\$575	\$1,965
Quarter page	\$270	\$860	\$400	\$1,400
Business card	\$200	\$600	\$335	\$1,000

For information on advertising & the benefits of membership at the different levels, please contact Renee at the WRWA office: 715-344-7778 or rkoback@wrwa.org. *Must be employed by a WRWA system, associate, or corporate member, retired and state or federal employees

CORPORATE GOLD MEMBERS

FERGUSON WATERWORKS

Delivering quality products and innovative solutions across the water, sanitary sewer and stormwater management industries.

Find the closest waterworks location near you by visiting

Ferguson Services
Division
(920) 731-3252

Appleton, WI
(920) 731-3252

Green Bay, WI
(920) 434-7830

Pewaukee, WI
(262) 691-8890

FERGUSON.COM/WATERWORKS



Engineering • Architecture
Environmental • Surveying
Landscape Architecture
Planning • Economic Development

800-472-7372 • www.cedarcorp.com

Dedication, Quality, Success

VITA-D-CHLOR™

VITA-D-CHLOR™ has revolutionized dechlorination of potable water during field applications such as hydrant flushing, reservoir overflows, in-line backwash lines, splashpads, waste water flow, new main installations, and pipeline sanitizing.



Pair it with **ZDe-Chlorinator** equipment, designed specifically to work with Vita-D-Chlor Tablets, and you have a perfect setup for hydrant flushing and in-line applications.

Vitamin C based product is safe and easy

What you get with Vita-D-Chlor:

- 100% organic and environmentally safe
- Does not reduce oxygen levels in water
- Instantaneous reaction time with total chlorine in water
- Operator safety in product handling
- Available in both tablet and granular forms

Setup is fast and simple

(253) 479-7000
info@vita-d-chlor.com
www.Vita-D-Chlor.com

**DECHLORINATE
BECAUSE DOWNSTREAM MATTERS**

PROUD SUPPLIER OF WATER & SEWER INFRASTRUCTURE MATERIALS & SERVICES

CORE & MAIN
WE'RE ALL ABOUT Wisconsin

De Pere, WI
(920) 983-8510

Sun Prairie, WI
(608) 834-1311

New Berlin, WI
(262) 786-5186

Hudson, WI
(715) 386-6010

Local Knowledge | Local Experience | Local Service, Nationwide®
coreandmain.com

800-362-7266



L.W. ALLEN
PUMP SYSTEMS

4633 Tompkins Drive • Madison, WI 53716
(608) 222-8622 • FAX (608) 222-9414 • www.lwallen.com

Fire Flows

By Todd Weich



It's that time of year again. Spring has come and gone, and summer is here. What does that mean? Construction projects are in full swing! Some of you have construction projects planned and happening this year; others may have done a water main project previously. So, I want to touch upon fire flows and hydrants.

Let's start with fire flows. One thing I can't stress enough is when you do a water upgrade you should also consider fire flows. If you loop your system and change pipe material or diameter size, it will affect your fire flows from your fire hydrants. When planning a water system upgrade, look at what's around for buildings and what consider potential developments in the future.

Something else to keep in mind: "NR 811.70 (6) FIRE PROTECTION: The minimum flow requirement for water mains serving fire hydrants is 500gpm at 20 psi residual pressure at ground level at all points in the distribution system." They also state that "It is recommended that the actual fire flow design be based on the capacity of any fire pumper which may be connected to the water main and the type of services or buildings to be protected. It is also recommended that the local fire department be consulted to discuss needed fire flows before constructing water system improvements." With new developments and fire hydrants popping up every day, don't be afraid to contact your local fire department and see what their ideal pressure would be for their pumpers. Another thing to keep in mind while adding new fire hydrants to new developments is that there must be a fire hydrant located every 300 – 650 feet (NR 811.71(1).

This is due to the simple universal fact of firefighting practice and the standard amount of hose on the fire trucks. If you do encounter a fire hydrant within your municipality that does not meet the requirements of NR 811.70 (6), you must either color code the hydrant or tag it but also notify the fire department in writing that said fire hydrant may not be used in the case of a fire due to the lacking ability in pressure until additional upgrades have been made and flow tests prove it to be above the requirement for fire protection.

The National Fire Protection Association (NFPA) also has slight requirements. NFPA 291:

What is the height of a fire hydrant NFPA?

All fire hydrants shall be set to finished grade with the lowest outlet thereof no less than 18 inches above grade and with no less than 36 inches of unobstructed area for the operation of hydrant wrenches on all outlets and the control valve.

NFPA 291 provides guidance on fire flow tests and markings of hydrants in order to determine and indicate the relative available fire service water supply from hydrants and to identify possible deficiencies which could be corrected to ensure adequate fire flows as needed.

If you have made changes and would like to perform some fire flows, contact your Circuit Rider for details and technical assistance in performing them.. *Todd*

OTM-NN Small Water System Sampling Requirements

Hello Everyone,

Today I want to talk about the importance of always checking your water sample requirements just so you don't miss an important sample that your water system is required to take. Checking your water system's sample requirements is key to staying in compliance with the WI-DNR regulations.

First off start by checking your water systems Sampling Requirements through the WI-DNR website at (dnr.wisconsin.gov). Once at your water systems sampling requirements you can check for all your Monthly, Quarterly or Yearly sampling requirements. Most of the time your system requirements do not change unless of a missed sample. If your system has missed a water sample, an additional sample may be required, and can always be checked here through the website. Missing forms or sampling paperwork can also be found on the WI-DNR website.

Most of your sampling requirements will include Monthly and Quarterly Bacteriological sampling, Lead + copper sampling, IOC, SOC, VOC, Nitrate and PFOA/PHOS sampling. Once you have figured out all your sampling needs please reach out to your certified lab and order bottles and complete your sample requirements in the compliance period. I know sometimes it may seem overwhelming but if you have any questions on checking your sample requirements, please give us a call. This is just one handy tool water operators should get into the routine of checking. The WI-DNR website offers a variety of helpful links for operators.

Please don't hesitate to call if you are experiencing any form of technical assistance or WI-DNR compliance issue. We are always happy to assist.

Thank you and have a wonderful day!

George Taylor,
Small Water System Circuit Rider • 715-321-4145 • Gtaylor@wrwa.org

CORPORATE GOLD MEMBERS

MIDWEST METER INC.

STEVE DAUSTER – PAUL KOEPKE – DANIEL MCCULLOCH

(262) 677-2887 – WWW.MIDWEST-METER.COM

N173 W21290 NORTHWEST PASSAGE WAY – JACKSON, WI 53037



Water & Wastewater Testing
and more!

Phone: 715-962-3121

514 Main Street, P.O. Box 526
Colfax, Wisconsin 54730

www.CTLCOLFAX.com

Environmental Lab Services



Food Lab

Lab@CTLCOLFAX.com



P.O. BOX 500
MENOMONIE, WISCONSIN 54751
OFFICE: 715-235-3110
CELL: 715-308-9665
FAX: 715-235-5385

LANE TANK CO., INC.

MATT FISHER
OWNER

WATER TOWER PAINTING & REPAIR - INSPECTIONS
NACE INSPECTOR NO. 36606
Email: lanetank@charter.net



CHEMICALS & FEED EQUIPMENT

Treat Water Like It's Money
608-314-9371

What Is a TMDL?



Jesse Hass,
WRWA Wastewater Technician/Trainer
Wastewater Specialist

What is a TMDL? As defined on the WI DNR TMDL informational page a TMDL is “a pollution “budget” for a water body or watershed that establishes reductions needed from each pollutant source to meet water quality goals. While some waters may be restored through alternative projects such as Watershed Restoration Plans, many issues are addressed through TMDLs.” The WI DNR informational page also states: “A TMDL is developed after consideration of all sources of pollution to an impaired waterbody and is stated as the amount of pollutant that the waterbody can assimilate and not exceed water quality standards. TMDL pollutant loads are determined in consideration of in-water targets that must be met for the waterbody to respond favorably. Targets may be based on promulgated numeric water quality criteria or may be based on narrative criteria developed in consideration of local data and/or nearby reference sites.”

These limits take into consideration point source and non-point source entities. Point sources are systems or entities that have WPDES permits and are discharging to a body of water based on that permit. Municipalities with WPDES permits are considered point sources. Non-point sources are any other sources where rain or snowmelt pick up any waste and deposit them into the water bodies of Wisconsin. A TMDL is designed to have

If you are in a TMDL that is currently being developed stay involved. There are also many systems that are not in an area where there will be a TMDL.

point sources and non-point sources each meet load applications to help impaired water ways.

An example of a loading breakdown was delivered at a TMDL meeting for the Upper Fox/Wolf River watershed that I attended. I'll refer to the Upper Fox/Wolf River TMDL study because I am most familiar with it. The study found that sources of phosphorous coming into the Upper Fox/Wolf River watershed was 60% from Agriculture, 20% from individual permits, 15% from background, and the remaining 5% from Storm Water, also referred to as an MS4. The study for the Upper Fox/Wolf River watershed found that the source of TSS was 92% from Agriculture, 4% from individual permits, 2% background, and 2% storm water. The percentages are interesting to say the least. There are 76 permitted wastewater systems in this basin, 56 are municipal and 20 are industrial. The municipalities are contributing less than 20% of the total amounts of phosphorus to this watershed. For the Upper Fox/Wolf River TMDL most municipalities are looking at a pound per day limit where the estimated mg/l will be around 0.2. This limit will be much lower than the 1 mg/l most systems currently have. The Upper Fox/Wolf River TMDL has been approved and it seems the limits will be implemented at some point over the next few permit cycles.

The information I provided for the Upper Fox/Wolf River TMDL does not apply to everyone, it is just an example of some interesting things I noticed with the Upper Fox/Wolf River TMDL. There are many TMDLs across the state that are in different phases of development. If you are in a TMDL that is currently being developed stay involved. There are also many systems that are not in an area where there will be a TMDL. Some cities will just be given a limit. There will usually be meetings that are held to discuss the impact of the limits you will be receiving. Attend the meetings and pay attention to the DNR website for important dates for meetings and comments. To do some research about your TMDL status you can find information by searching TMDL on the WI DNR website. Knowledge is power, stay engaged in the process. Ask questions about your phosphorus limits and try to get a definitive timetable on implementation of these limits. Before it comes time to meet these limits start gathering data for the best ways to do so. Ask other cities what they are planning to do and what technologies they are considering. If you hear of a technology that is working, try to go see it in operation and ask the operators what they like and do not like about the process.

It is going to be an interesting next 5 to 10 years as most systems try to meet lower phosphorous limits. Stay on top of things, tour plants, and go to classes and conferences to try and be as informed as you can. Meeting any lower limit might be a financial burden for many communities. Do research on different funding options so you know what loans and grant are available for you community. *Jesse*

15
P
Phosphorus
30.97

STRUCTURE. & INTEGRITY.

**PITTSBURGH
TANK & TOWER
GROUP**
An ESOP Company Since 1919

"100 years and still climbing"

**CREWS
AVAILABLE
GLOBALLY**



INSPECTIONS

Wet
Dry
ROV
In-Service
Cleaning

REPAIR

Code
Updates
Paint
Insulation

TANKS

Elevated
Ground
Relocation
Erection
Dismantles

If you are interested in having us as your partner, feel free to contact one of our department representatives below

NEW TANKS – Rick DiZinno
(270) 826-9000 ext. 2601
EXISTING TANKS – Jordan Pyles
(270) 826-9000 ext. 4601



WWW.PTTG.COM

CORPORATE GOLD MEMBERS

Your Project Solutions Start Here

**Sheryl Claflin, PE
President**

cbs²

770 Technology Way
Chippewa Falls, WI 54729

715-861-5226

sclaflin@cbssquaredinc.com

Cell: 715-450-6538

cbssquaredinc.com

Building a Better World for All of Us®



Engineers | Architects | Planners | Scientists
800.325.2055 • **sehinc.com**

**Leave Your Water
System To The Experts**

- WELLS • PUMPS
- CHEMICAL FEED SYSTEMS
- VFD'S & CONTROLS
- PERIPHERAL EQUIPMENT

CTW Corporation
Wells • Pumps • Controls
262-253-6613

LANNON • EAU CLAIRE • LACROSSE • BARABOO • GREEN BAY
ctwcorporation.com

AQUATECH®
A Product of Arvin Corporation

ALAMO

Ampliroll

**Bridgeport
MANUFACTURING**

EZ-Rick

Perkins

POLYFLOW



BAYNE
Precision Lift Systems

LOADMASTER
A Product of L.O. Corp.

**SCHWARZE
INDUSTRIES**

SALES, PARTS and SERVICE

Refuse and Recycling Trucks, Street Sweepers,
Combination Sewer Jetter Machines, Hooklift Trucks,
Asphalt Patching Equipment, Snow Removal Equipment

EQUIPMENT DESIGNED TO MEET YOUR NEEDS

R.N.O.W., Inc.
8636R West National Avenue
West Allis, WI 53227

414.541.5700

800.201.7669

fax: 414.543.9797

www.rnow-inc.com

Lodal



Wisconsin DNR Operator Certification Exams Update

Sam Wettach, Operator Certification Coordinator – Drinking Water & Groundwater, Wisconsin DNR

Since the onset of the pandemic in March 2020, Wisconsin DNR's Operator Certification program has adjusted how we offer exams from our previous format. This was due to a need to adapt to the conditions of the pandemic while pursuing a modernization effort to move our exams from paper to computers.

Traditionally, exams facilitated through February 2020 were held four days each year. These included two larger exam days in May and November in Rice Lake, Rhinelander, Eau Claire, Plover, Green Bay, Madison, and Milwaukee. Additionally, two exam days in February in August were held in Plover. During the beginning of the pandemic, DNR worked on developing an exam application process that allowed operators and facilities with an urgent need to apply to take limited capacity exams that complied with public health guidelines. These sessions were all held in Plover December 2020 – December 2021.

In January 2022, we launched our new third-party computer-based exam platform through PSI in partnership with WPI (formerly ABC). Exams were offered either from a personal computer (remote proctor) or in-person at a PSI computer lab. While our exams moved to computers and are facilitated by PSI, the exams have not changed. Wisconsin DNR continues to manage our exam content and study guides and will not

be adopting WPI's national exams. More simply, we moved the exams from paper to a computer.

Throughout this first year of exams, the Operator Certification tracked all feedback that was submitted regarding the PSI testing platform, the exam-taking experience both in-person and via remote proctor, and PSI customer service. Additionally, Operator Certification conducted a survey through DNR's Analysis Services program that was sent via email in late February to every person who signed up to take an exam through PSI from January 2022 – February 2023. One of the primary takeaways from the survey was that the remote proctor (online) exam option had resulted in unacceptable experiences for our exam takers.

- Since January 2022, 21% of exam takers who scheduled a remote proctor exam were not able to launch and start their exam largely due to tech issues. All missed exam sessions resulted in loss of all exam fees
- 64% of exam takers took over 30 minutes to launch the remote proctor session (a quarter were ultimately unable to launch their exam)
- 64% of remote proctor exam takers were dissatisfied or very dissatisfied with the overall remote proctor experience
- 79% of all exam takers needed to contact PSI for some level of assistance



With these survey results, previously received feedback from exam takers, and the increased staff time that the Operator Certification program has had to dedicate to address exam issues, DNR determined the remote proctor (online) option was untenable, unsustainable, and that the best option was to remove remote proctor as an exam location option.

Beginning April 1, 2023, all Operator Certification computer-based exams are held at PSI's in-person computer labs. The cities with computer labs include Rhinelander (as of May), La Crosse, Stevens Point, Oshkosh, Green Bay, Madison, Waukesha, Pewaukee, Duluth, MN and Marquette, MI. Please note that while exams are offered six days/week that locations are subject to availability based on open seats and site capacity. You will see available locations when registering your exam through PSI's website after receiving your PSI exam eligibility email from schedule@goamp.com.

Additionally, DNR staff will be hosting a limited number of in-person paper exams in central and northern Wisconsin. We facilitated exams in Plover on May 16th and 17th, Rhinelander on June 20th, and Rice Lake on June 21st. DNR is finalizing additional dates for this fall that will continue to focus on locations in central and northern Wisconsin due to fewer available PSI locations in those regions. For updates, please follow DNR's Operator Certification Exams page (<https://dnr.wisconsin.gov/topic/opcert/exams.html>).

I would like to thank all who have provided feedback to DNR, either by email or by survey. Without your feedback, positive and negative, we cannot fully understand how exams are going. Lastly, I strongly encourage anyone to provide feedback as you continue to take exams, whether it's on paper through DNR or on computers through PSI. Any and all feedback can be emailed to DNROpCert@wisconsin.gov.

CORPORATE GOLD MEMBERS



**7301 West Calumet Road
Milwaukee, WI 53223
414-973-2220
www.etnasupply.com**



Waste & Recycling Solutions & Technology for a Greener Tomorrow

**Compactors - Balers - Conveyors - Sorting & Specialty Equipment
Hoists - Sweepers - Refuse Trucks - Parts - Service**

www.jwrinc.com

**JAMES ORR
NACE CERTIFIED
COATING INSPECTOR**

608-213-8085
 james@orrinspect.com
 www.orrinspect.com
 1013 Valley Stream Dr.
Madison, WI 53711



Mark O'Leary
Client Solutions Manager
& Ecologist

moleary@res.us
608.354.2617 mobile
www.res.us

[res-us](https://www.linkedin.com/company/res-us)

FSC Certified 100% post-consumer waste recycled paper

VFDS

By Dan Wundrow

For those that don't know what VFD stands for it is Variable Frequency Drive. That means it controls the frequency output of the motor.



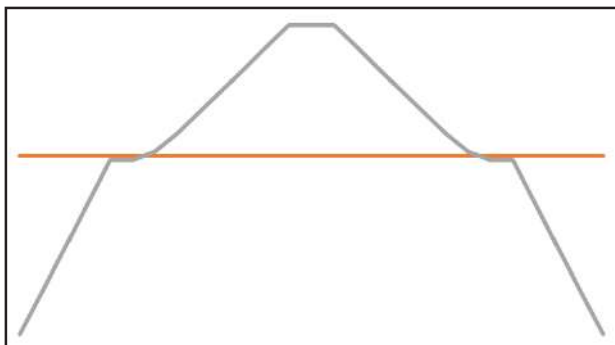
For the last few years, I have assumed the Energy Efficiency role. As of now, I have taken over Jeff LaBelle's territory as Municipal Circuit Rider. Some of you have already had the chance to meet me, and for the rest, I will be stopping around shortly to introduce myself. In the meantime, if you need my assistance, please give me a call (715)563-0188.

For those that don't know what VFD stands for it is Variable Frequency Drive. That means it controls the frequency output of the motor. Changing the hertz (Hz) of the motor will slow the motor down, which will save money as well. Think about your car or truck for a moment. Image your vehicle when you started, it just drove as fast as the motor turned over and you controlled the speed by just pressing on the brake. What you have is a lot of wasted energy. Now think about the gas pedal, you push that down to go faster and let it up to go slower. That is the concept behind a VFD, control the speed first rather than trying to stop the speed.

Over the last few months, I have found that many systems are using them as soft start option rather than energy savings devices. By no means using them as a soft start is a bad thing. That's the great thing about VFDs, they can be used in many different functions and settings. Today, we will talk just a little bit about some other functions a VFD can be used for.

Using a VFD as a soft start seems to be the most common application within the water industry. Which does work well. There can be some problems with this set up still causing water hammer. This can be fixed with a few set point adjustments within the VFD.

This can be achieved by setting the VFD to ramp up at a semi-slow speed that allows water to be pumped up the well casing and meet the check valve. At that point the VFD will speed up over the course of a five-minute period until the well pump overcomes the head pressure of the check valve. This in turn will slowly open the check valve while the VFD still continues to speed up until at full operational speed of 60hz. When the well is ready to turn off, the VFD will start the same five-minute slowdown and allow the check valve to close softly.



The chart to the left shows the VFD speed in gray and the Check Valve pressure in orange. As you can see, the VFD slows down at the check valve opening point until the well pump and check valve are at the same pressure. Then the check valve opens softly and slowly. The same happens when the well pump shuts down. Once the well reaches the check valve pressure, the VFD levels out and allows the Check valve to close softly and slowly.

A VFD can also be set up to operate based off from pressure (psi) rather than hertz. This is not a common or well-known

setup. However, if you have a VFD installed, talk with the installer, and ask if they can also set it up to operate on PSI as well. Why would you want this done? Example, during a water tower drain down, VFDs can be switched to PSI, allowing you to set the desired pressure of your system in the VFD. This allows your well pump to maintain the system pressure rather than fully relying on the pressure relief valves to do all the work. I would still recommend installing a few pressure relief valves during a tower drain down as a precaution. Overall, this will help reduce the total overall water loss during a tower drain down.

Now there is still part of me that is an energy geek, so, I must put this in about energy savings. This was during the last energy assessment that I did. Below is a chart showing the energy savings with a well pump. This well pump is a 40-horsepower motor that has an efficiency rating of 94%. The well runs for 18.15 hours per day and the kWh cost is \$0.20 per kWh. When looking down at the 80% speed you will see that the total annual savings are \$10,598. One can see significant savings may be achieved. However, at some speeds there may not be enough head pressure to pump. Each system will need to play with the settings to see what is possible in the real world.

Hp	Eff.	Eff.	Conver.	kW	Q	2.3 ¹	Oper	Day	Days	kWh	Wks	Yr kWh	kWh \$	kWh Year	kW D	kW	Month	Year	Total	Saved Yr.
HP		Hp	to kW	Kw	Flow	kW	Hours	kW hr	week	Week	WkYr	kWh Yr.	Cost		Fee		Demand	Demand		
40	94%	42.6	0.746	31.74	100%	31.7	18.15	576.2	7	4033	x 52	210,450	\$0.20	\$42,090		32	\$0	\$0	\$42,090	
40	94%	42.6	0.746	31.74	97%	29.6	18.7	553.8	7	3877	x 52	202,280	\$0.20	\$40,456	\$0.00	30	\$0	\$0	\$40,456	\$1,634
40	94%	42.6	0.746	31.74	95%	28.2	19.1	539.0	7	3773	x 52	196,875	\$0.20	\$39,375	\$0.00	28	\$0	\$0	\$39,375	\$2,715
40	94%	42.6	0.746	31.74	90%	24.9	20.2	502.4	7	3517	x 52	183,512	\$0.20	\$36,702	\$0.00	25	\$0	\$0	\$36,702	\$5,388
40	94%	42.6	0.746	31.74	80%	19	22.7	431.1	7	3018	x 52	157,459	\$0.20	\$31,492	\$0.00	19	\$0	\$0	\$31,492	\$10,598

These are just some of the things that a VFD can do to help with your system and make your job a bit easier. If you have questions about VFDs, please reach out to any one of us and we can help you get on the right path. I hope that this article was helpful. I look forward to meeting many more of you in the upcoming months and years. Have a safe and happy summer. *Dan*

Analyzing Nitrate Trends in Wisconsin



Andrew Aslesen,
WRWA Source Water Specialist

Groundwater Nitrate levels can be viewed four different ways, nitrate concentration as a county average, nitrate concentration in individual wells, nitrate county average trend (increasing or decreasing), or nitrate in individual wells trend (increasing or decreasing).

According to the Wisconsin Groundwater Coordinating Council's Annual report to the legislature, Nitrate is Wisconsin's most widespread groundwater contaminant. Several reports show that Nitrate contamination of groundwater is increasing in extent and severity in the state. Between 1999 and 2012 the number of municipal systems with raw water samples that exceed the

MCL for Nitrate of 10 mg/L increased from just 14 systems to 47 systems and increasing Nitrate trends have been observed in an additional 74 municipal systems. The full Nitrate section of the GCC report can be found on the DNR's website using the following URL: <https://dnr.wisconsin.gov/sites/default/files/topic/Groundwater/GCCGWQuality/Nitrate.pdf>.

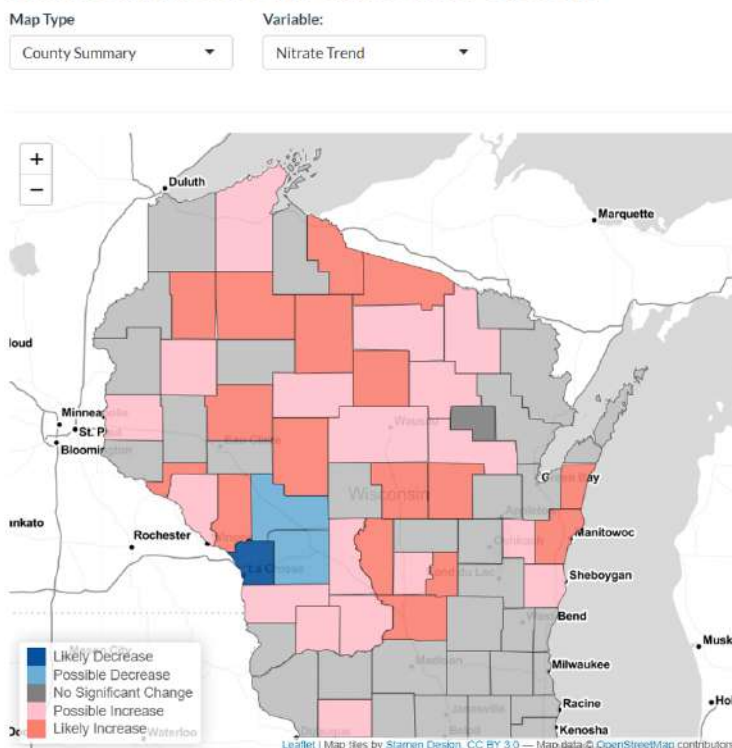
While these statewide trends are important, they aren't necessarily useful for local water managers or decision makers when deciding if they need to spend time, effort, or money on trying to reduce nitrate loading to groundwater in their area. Because of that, I would like to highlight a new tool developed by the Center for Watershed Science and Education in partnership with the DNR, that can be used to view Nitrate trends at a more local level. The tool can be found using the following URL: https://uwsp-watershed-center.shinyapps.io/WI_NITRATE_TRENDS/. Public water systems are required to submit nitrate samples to the DNR at least annually. This includes not only municipal water systems, but all other categories of public water system, which includes Municipal, Other-than-municipal, Transient non-community and Non-transient non-community public water systems. This creates a much larger dataset than municipal wells alone. This tool aggregates this large Nitrate dataset and displays it using a mapping application for easy viewing.

Groundwater Nitrate levels can be viewed four different ways, nitrate concentration as a county average, nitrate concentration in individual wells, nitrate county average trend (increasing or decreasing), or nitrate in individual wells trend (increasing or decreasing). The nitrate concentration viewed at the county average represents the mean annual nitrate concentration of public water systems for 2018. The nitrate concentration viewed as individual wells shows the most recent nitrate concentration on a map as color coded points and gives a drop-down menu where you can select the Wisconsin Unique Well Number to view a graph of annual nitrate concentration. Nitrate trends can also be viewed as a county summary or as individual wells. The County summary of nitrate trends takes a subset of the public wells that have more than 20 years of nitrate results. For each county, a linear model was used to fit a regression line to the mean annual nitrate concentration. A dropdown menu lets you view the trend line for a selected county. A map shows each county in the state as having a likely increasing, possibly increasing, likely decreasing, possibly decreasing or no significant change in nitrate trend.

Based on the data, 17 counties show a likely increasing trend, and another 18 counties show a possible increasing nitrate trend while only one county shows a likely decreasing trend, and two other counties show a possible decreasing trend. Those counties are La Crosse, Monroe and Jackson Counties respectively. This data analysis tool supports the conclusion of the GCC report that groundwater nitrate concentrations in the state are increasing. If your municipal well is showing an increasing trend in Nitrate, you should consider taking some action to mitigate nitrate contamination before it becomes a problem. WRWA's Source Water Protection program can help, feel free to reach out any time if you have questions or want to talk about nitrate; Andrew Aslesen, WRWA Source Water Specialist at Aaslesen@wrwa.org or calling 715-321-3451."

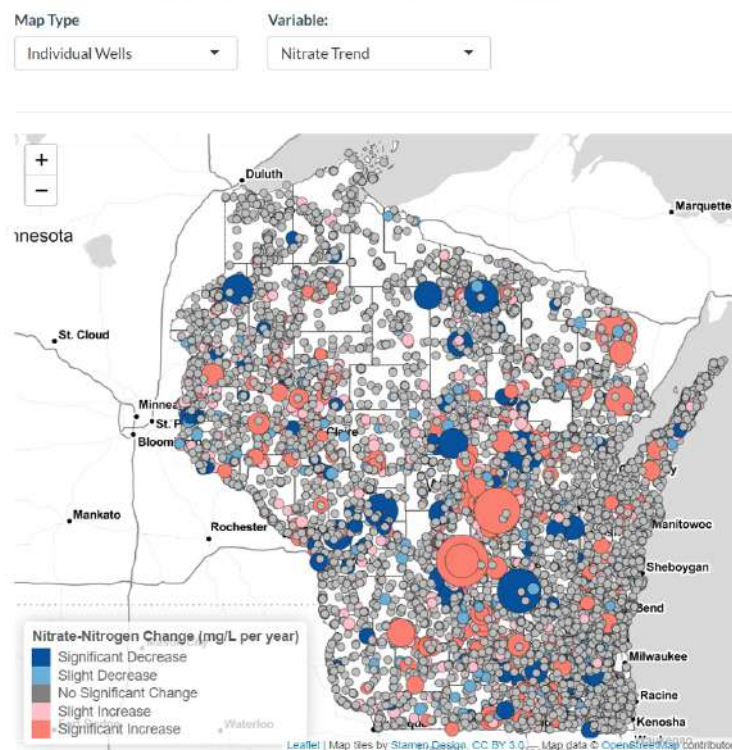
Andrew

Nitrate in Wisconsin Public Water System



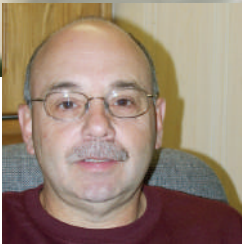
Picture 1: Nitrate concentration viewed as a county trend.

Nitrate in Wisconsin Public Water System



Picture 2: Nitrate concentration trend in individual wells.

WHY WON'T WE CHANGE?



Vince Matarrese,
Advanced Safety Technology, Inc.
President

Numbers will go up as long as there is no enforcement of the rules. This is one of the reasons why we won't change and follow the rules.

According to NIOSH, from 2011-2020, transportation events accounted for 73% of worker deaths that occurred at road construction sites during the 10-year period (919). In 63% of these transportation events at road construction sites, the worker was struck by a vehicle (577).

371 of the 577 workers were struck by a forward-moving vehicle, 123 by a backing vehicle.

Pickup trucks and SUVs accounted for 169 worker deaths at road construction sites from 2011-2018, followed by automobiles (149), machinery (146), semi-trucks (141), and dump truck (89).

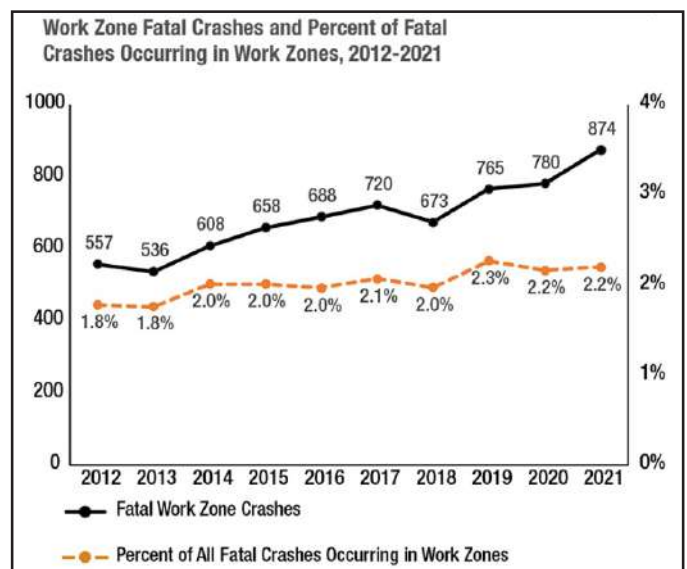
Numbers will go up as long as there is no enforcement of the rules. This is one of the reasons why we won't change and follow the rules.

From 2011-2018, 68 percent of the workers who were killed were employed as:

- Construction laborers (253)
- Heavy and tractor trailer drivers (142)
- First-line supervisors of construction and extraction workers (96)
- Highway maintenance workers (96)
- Construction equipment operators (81)

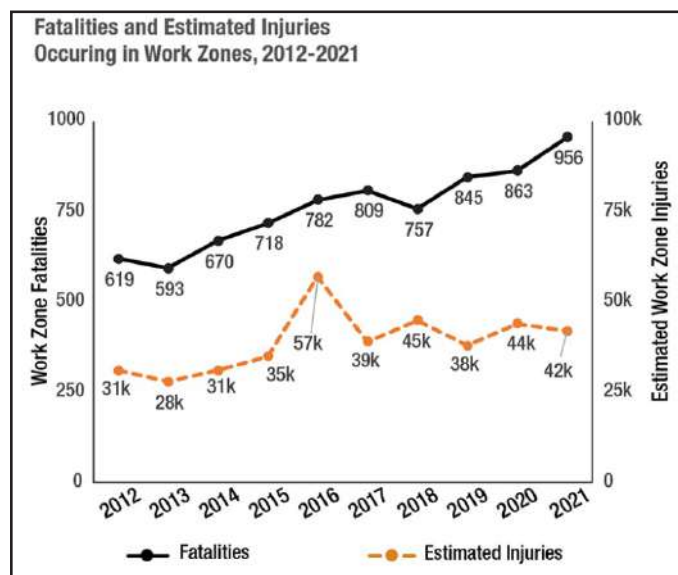
From 2011-2018, 864 workers killed at road construction sites worked in private-sector construction. Of those, 68% worked for either heavy and civil engineering construction companies (470) or specialty trade contractors (119).

Over the 10 years from 2011-2018, 144 workers (**14%**) killed at road construction sites worked in the **government sector**, with roughly equal numbers working for state (73) and **local governments** (68).



Over the past 10 years, fatal crashes in work zones have **increased** from 557 in 2012 to 874 in 2021. The percent of all fatal crashes that occur in

work zones has also increased slightly, from 1.8 percent in 2012 to 2.2 percent in 2021. (Source: NHTSA FARS)



Over the past 10 years, work zone fatalities have increased from 619 in 2012 to 956 in 2021. This equates to nearly three persons per day being killed in work zones in 2021. Approximately four out of every five work zone fatalities involve a driver or passenger of a vehicle. Meanwhile, estimated injuries in work zones have also increased, from 31,000 in 2012 to 42,000 in 2021. In 2021, this equates to approximately 112 injuries per day in work zones. (Source: NHTSA FARS, GES, and CRSS)

Wear The Proper Clothing (Class 3 or above)! Follow the Manual On Uniform Traffic Control Devices (PART 6. TEMPORARY TRAFFIC CONTROL). <https://wisconsin.gov/Pages/doing-bus/local-gov/traffic-ops/manuals-and-standards/wmutcd/wmutcd.aspx>

ANSI/ISEA 107 2015 for High-Visibility Safety Apparel And Accessories

Type R (“roadway”) – Occupational HVSA for Roadway Use

Type R HVSA provides daytime and nighttime visual conspicuity enhancement for workers in occupational environments which include exposure to traffic (vehicles using the highway for purposes of travel) from public access highway rights-of-way, or roadway temporary traffic control (TTC) zones or from work vehicles and construction equipment within a roadway temporary traffic control (TTC) zone.

Type P (“public safety”) – Occupational HVSA for Emergency and Incident Responders and Law Enforcement Personnel

Type P HVSA provide daytime and nighttime visual conspicuity enhancement for emergency and incident responders and law enforcement personnel in occupational environments which include exposure to traffic (vehicles using the highway for purposes of travel) from public access

highway rights-of-way, or roadway temporary traffic control (TTC) zones, or from work vehicles and construction equipment within a roadway temporary traffic control (TTC) zone or from equipment and vehicles within the activity area. Type P HVSA provides additional options for emergency responders, incident responders and law enforcement who have competing hazards or require access to special equipment.

Performance Class 3 (Type R or P)

Performance Class 3 can offer greater visibility to the wearer in both complex backgrounds and through a full range of body movements by mandatory placement of background, retroreflective and combined-performance materials on sleeves and pant legs (if present). Regardless of the area of materials used, a sleeveless garment or vest alone shall not be considered Performance Class 3.

THINGS TO REMEMBER

A supervisor who is knowledgeable in traffic control principles should be responsible for work zone setup.

- The supervisor should walk or ride through the work zone to make sure it is set up properly.
- Halt the work until unsafe conditions related to temporary traffic control have been eliminated.
- Document the work zone setup and changes that were made. Take pictures!
- Close the road completely and reroute traffic where feasible.
- Increase the size of the lateral buffer zone to reduce worker exposure to passing motorists.
- Emphasize the use of proper high-visibility safety apparel.

Cover or take down warning signs when workers are not present. Every week I see flagger ahead signs or lane closed, nobody is present and the lane is open. This is one of the reasons why motorists do not pay attention to signs. And yes, phones do contribute to this also.

Be safe this summer. Remember, it's all about going home. *Vince*

Water Well & Pump Service

Well Design, Rehab, & Installation

📞

888-769-9009

🌐

www.wwsbg.com

📍

N87 W36051 Mapleton St.
Oconomowoc, WI 53066

Water Well Solutions

Supported By:

WRWA SUMMER 2023 / www.wrwa.org

25



**EFFICIENCY
SAVES MONEY.**

**CONVENIENCE
SAVES TIME.**

WE OFFER BOTH.

It's the synergy that comes from supplying both pump equipment and electrical controls to operate those pumps. It's the one stop shop for selection and sizing as well as after-market service to the end user.

We sell solutions that provide the highest operational efficiency. We have premium-efficient pumps and motors along with advanced control strategies to reduce energy costs.

We understand your needs and the dynamics of your situation. We'll develop customized solutions and enhanced services that you can't find anywhere else. With one call, find out why L.W. Allen pumps and Altronex control systems have become the leading provider of pumps, controls, technical assistance and superior customer service.



L.W. ALLEN
PUMP SYSTEMS



ALTRONEX
CONTROL SYSTEMS

**Reduce your energy costs
and save time. Call (800) 362-7266.**

4633 Tompkins Drive • Madison, WI 53716
(608) 222-8622 • FAX (608) 222-9414 • www.lwallen.com



WRWA

Outdoor Expo 2023

Join us on ...
Thursday August 24, 2023

Outdoor Equipment Exhibits
and
Educational Product Demonstrations.

ACTIVITIES

- Product Demonstrations
- Equipment Demonstrations
 - Expo Raffle
 - Vendor Activities
 - And Much More!

WRWA Outdoor Expo 2023

Agenda

Thursday August 24, 2023
(6 Municipal Water and 6 Wastewater Credits)

Office Building Classroom

8am – 9am	Transitioning from MDV Program to Water Quality Trading and Risk Management How to transition over time from the MDV program to water quality trading and managing risk. Mark O'Leary, <i>Resource Environmental Solutions - RES (WRWA Corporate Gold Member)</i>
9am – 10am	Monoform Plus Rehabilitation of underground utility components impacted by degradation. Matt Huston, <i>HK Solutions Group (WRWA Associate Member)</i>
10am – 11am	CISA 101: Physical and Cyber Resources for Water/Wastewater Operators Discussing the physical and cyber resources CISA field personnel can deliver at no cost. Bill Nash, John Busch, and David Melby, <i>Cybersecurity and Infrastructure Security Agency</i>
11am – 12pm	Duckweed's Role in Lagoons Describing the pros and cons of duckweed and highlighting methods to control or prevent it. Ben Shakman, <i>Triplepoint Environmental</i>
12pm – 1pm	Working Lunch and Product Demonstrations (outside)
1pm – 2pm	Proper Selection and Maintenance of Valves and Actuators Factors to ensure optimum performance of valves and actuators. Mike Barreau and Everett Russell, <i>Dorner Company (WRWA Corporate Member)</i>

Technology Center Classroom

8am – 9am	Active Mixing in Potable Water Tanks Benefits of mixing in potable water tanks including preventing ice and thermal stratification. Tony Belden, <i>Great Northern Environmental (WRWA Associate Member)</i>
9am – 10am	South Milwaukee Water Emergency A timeline of events and resulting impacts to a water distribution system from storm damage. Ben Huffman, <i>South Milwaukee Water Utility (WRWA Water Utility Member)</i>
10am – 11am	When Sip Happens Looking at the importance of performing regular maintenance to ensure asset reliability. Dan Popehn, <i>KLM Engineering (WRWA Corporate Gold Member)</i>
11am – 12pm	Latest Technology in Well Casing Repair Discussing new technology in well casing patches. Mike Judkins and Peter Bennin, <i>Water Well Solutions Wisconsin LLC (WRWA Corporate Gold Member)</i>
12pm – 1pm	Working Lunch and Product Demonstrations (outside)
1pm – 2pm	Water Tower Agreements: Standing up to the Cell Phone Company Steps utilities can take to secure long-term revenue at market rates from cell phone companies. Dale Romsos, <i>VMC LLC and Julia Potter, Boardman Clark (WRWA Associate Member)</i>

WRWA Outdoor Expo 2023

EXPO INDIVIDUAL REGISTRATION INFORMATION

August 24, 2023 - WRWA State Office/Technology Center
350/351 Water Way, Plover, WI
East of Highway 39/51 and north of County Highway B

GENERAL INFORMATION

WRWA Outdoor Expo will be held Rain or Shine

Water/Wastewater training CEC's offered
FREE safety T-Shirt with paid attendance



INDIVIDUAL REGISTRATION FORM

System/Firm _____

Attendee Name _____ DNR Cert. # _____

Attendee Name _____ DNR Cert. # _____

Attendee Name _____ DNR Cert. # _____

Attendee Name _____ DNR Cert. # _____

Address _____

City _____ State _____ Zip _____

Phone _____ email _____

Cancellation date August 4, 2023

Pre-Registration

Attending ____ x \$85 = _____

Onsite Registration

Attending ____ x \$95 = _____

Send payment and form to: WRWA, 350 Water Way, Plover, WI 54467

TO PAY BY CREDIT CARD

Go to www.wrwa.org - **MUST** fax completed form(s) to (715) 344-5555 or email the completed form(s) to wrwa@wrwa.org

Questions Please Call WRWA at (715) 344-7778



Wisconsin Rural Water Association supports Rural Water Financing Agency

The Rural Water Financing Agency provides interim construction funding to borrowers with a USDA takeout (or other approved permanent lender).

The Agency* has made over \$1 billion in interim loans to borrowers with a USDA takeout!

**Includes the Agency's predecessor organization (Kentucky Rural Water Finance Corporation)*

STREAMLINED PROCESS

1. Submit an application online via ruralwaterfinance.com
2. Legal document preparation
3. Construction bidding, USDA takeout letter
4. Interim loan closing, funds available for disbursement
5. Construction completion, USDA loan closing/interim loan payoff

Please reach out to one of the contacts below to learn more.

Chris Groh, Executive Director

Wisconsin Rural Water Association

cgroh@wrwa.org

715.340.2055

Gary Larimore, President & CEO

Rural Water Financing Agency

g.larimore@krwa.org

270.535.5921

Nick Roederer, Managing Director

Raymond James (Program Underwriter)

nick.roederer@raymondjames.com

502.741.3686

Kristen Millard, Director

Raymond James (Program Underwriter)

kristen.millard@raymondjames.com

859.232.8249

Daniel Olson, Corporate Trust Relationship

Consultant Regions Bank (Program Trustee)

daniel.olson@regions.com

615.770.4357

Your Industry Leader in Preventing Inflow and Infiltration in Manholes and Catch Basins

COST PREVENTATIVE SOLUTIONS
DESIGNED TO STOP INFLOW & INFILTRATION



GATOR WRAP®



FLEX-SEAL®



INFI-SHIELD®



AQUA SEAL®



MANHOLE INSERT



VALVE BOX ADAPTOR

We desire to provide our customers with the highest quality and most advanced systems for both rehabilitation and new construction across the global market.



Sealing Systems, Inc.
800-478-2054
www.ssisealingsystems.com

Over 100 years combined experience!

Water Storage Facility Inspections

By Seth Petersen

What a winter! I can speak from experience, dealing with a winter like this last one and trying to do your regular duties is very challenging. Reduced staffing and limited budgets can make removing snow that satisfies the public's expectations feel like a lost cause. As we transition from a brutal winter into summer, we have received a few phone calls about water tower inspections. With that in mind, I would like to spend a minute discussing the Who's, When's and How's of water tower inspections.

WHO?

I would like to start off by describing an important **"who"** that might get missed during water storage facility inspection preparations... Please let your DNR Representative know that you will be taking your tank offline a minimum of 48 hours prior to doing the inspection per NR 810.14.

NR 810.14 outlines the codes regarding water tower inspections. Any water system with a water storage facility that is larger than 10,000 gallons is required to follow these codes, you know who you are... The code requires that the utility use a professional tank inspection firm or a registered professional engineer to perform an inspection. Their maintenance shall include removal of sediment and biofilm prior to the evaluation of structural, mechanical, and coating systems. Please be prepared to make repairs as necessary to ensure good working conditions. Don't send the Village Clerk up there with a flashlight and a camera unless they are experienced in paint inspection!

WHEN?

The **"when"** of water storage facility inspections is a minimum every 5 years and/or as required by WIDNR. You must perform a complete drain down inspection of the water storage facility every other 5-year inspection or at a minimum every ten years. The utility is also required to perform a yearly inspection of the vent, overflow screens and hatches. In my experience, most communities have the yearly inspection performed by the same person or firm that will be doing the 5-year inspections. Hopefully, they offer a yearly inspection and report that continues to track the condition of your tower.

HOW?

The **"how's"** of water storage facility inspections are described below. Please note, again, that these inspections are required to be done by a professional tank inspection firm or by a registered professional engineer.

Drain down inspections are at least every 10 years. This inspection is accomplished by completely draining down the tank and cleaning any sediment in preparation for inspection. Following inspection, the tank needs to be disinfected in accordance with one of the methods in AWWA Standard C652-02. A minimum of 2 successive safe samples, taken at 24 hour intervals, need to be obtained before the tower can be put back in service. Obviously, every storage tank and system are different. Please work

out the procedure for draining, maintaining system pressure, filling the tank and where you are going to take your samples with your inspectors and staff prior to draining the tank! If there is a free chlorine residual of at least 0.1mg/L when the result of the first safe sample is reported, you may only need to take one sample. Please speak with your DNR representative regarding this process.

Float down or partial drain inspections are accomplished using a disinfected inflatable raft. The process is accomplished by lowering the tank water level below the normal low operating level to expose the sidewalls of the tank. The beauty of this process is that the tank may remain online. The float down process allows the inspectors to get up close to the interior of your reservoir and perform multiple tests on the coating and structure. While the inspection is being performed a minimum of 0.5mg/l chloring residual should be maintained. All equipment used in the process should be disinfected. A minimum pressure of 35psi needs to be maintained during the process so please be careful with how low you drop tower water levels. Following this inspection there needs to be 2 bacteriologically safe samples obtained. One sample following the inspection and one 24 hours later.

Diver and Robotic inspections are described separately in the code but are a very similar process. These types of inspections are especially useful if there is minimal sediment, the reservoir is in good condition and has been inspected regularly. Both types of inspections can be performed while the facility is in service but a minimum of 0.5mg/l chlorine residual shall be maintained during the inspections. All equipment used for potable water must be disinfected with a 200ppm chlorine solution. Sediment should be removed prior to inspections. The top of concrete ground reservoirs should be soaked with water and the interior check for water leaks and a minimum of 2 bacteriologically safe samples need to be obtained from the tank after the inspection, one following the inspection and one 24 hours later.

The final step in the inspection process is submitting the inspection report to your DNR regional drinking water staff person. The contractor should fill out an inspection form and you need to make sure it gets to your DNR water supply engineer. You should include any reports, pictures, and videos when you submit the inspection form.

As the costs for water storage reservoir renovations keep going up and up, keeping up with the condition of your reservoir is essential. Please reach out to your WRWA Circuit Rider with questions or assistance with your inspections. WRWA Circuit Riders are very experienced with this process and enjoy helping you out. Now that we have gotten that done, I hope you get a chance to get out and enjoy summer! Let me know when we are playing golf!

Seth



YOUR SINGLE SOURCE FOR WASTEWATER TREATMENT SERVICE AND EQUIPMENT

Crane Engineering is a one-stop-shop for all your needs. Product install is accompanied with personalized training and support.

[CLICK HERE TO VISIT OUR WEBSITE](#)



SULZER XFP

- High quality design and construction
- IEEE premium efficient motor is standard
- Contrablock Plus pump impeller
- Excellent solids and rag passage
- Best warranty of any submersible pump



SULZER XRW

- High quality design and construction
- IEEE premium efficient motor is standard
- Compact design

Call 800-776-4425 or go to craneengineering.net



A Day in The Life of a Wastewater Operator

By Tony Roche

Being a wastewater operator is not an easy job. Wastewater treatment plants and collection systems come in all shapes and sizes, and as an operator it is your job to keep things running smoothly. Whether you operate a 0.1 MGD system or a 10 MGD system there are many tasks to keep you busy throughout the day.

When your shift starts (if you work a strait shift or a rotating shift) there are rounds to be taken. Checking your samplers at the start of a shift is a good way to start the day. Take a look at the contents of your samples and remember to document important things like sampler temperature, sample collection time, sample volume, and anything unusual about your samples (odd color, odor, contents). Documentation is so important! I cannot stress that point enough. Keeping written records will help you track unusual events and can help you identify trends or patterns if your system experiences an upset of some kind. Other duties to perform on your rounds should include things like documenting flows (influent, effluent, return activated sludge volume, waste activated sludge volume, chemical usage volumes, primary sludge withdrawal, digester feed, digester withdrawal, sludge storage tank volume). Documenting equipment run times (hours) and rates (blower SCFM and pump GPM) is also very important. You will get to know your pump rates very well and if you see things like decreasing pump rates it should trigger you to do some investigation. I remember seeing pumps rates diminish on

return activated sludge pumps in October when the leaves began to fall, and that usually signaled that the pump impeller was clogged with leaves...

As your day progresses it is very important to do process control checks. Breaking out your good old buddy the Sludge Judge and documenting sludge blanket depths in your primary and secondary clarifiers is a great process control tool and should be done every day. Remember it is a good idea to maintain a blanket depth of 1 foot or less in your final clarifiers. If you see your blanket depths increase it may indicate that you have a blown seal on your sludge pumping mechanism. Another very important process control check is documenting the dissolved oxygen content in your aeration basins. Remember that aeration provides both mixing and oxygen! You need good mixing to ensure that wastewater contents (like BOD) come into contact with the microorganisms in your mixed liquor. You also need to supply proper amounts of oxygen – it is a good idea to provide the minimum amount of oxygen necessary because adding too much is essentially flushing money down the drain.

Another very important process control tool in an activated sludge plant is the 30-minute settling test. This test mimics the operation of your final clarifiers and should give you an accurate representation of what is happening in your clarifiers. To perform a settling test, you



will need to take a mixed liquor sample at the very tail end of your aeration basin and gently shake it before you pour the contents into a settleometer. If you violently shake your sample you will break up your floc particles and not have an accurate representation of your mixed liquor. When you perform your settling test it is a good idea to document sludge levels every 5 minutes all the way to the 30-minute mark. If your sludge settles very rapidly ("like a rock") it could be indicative of old sludge, and you may also have poor quality effluent. If your sludge does not settle hardly at all (i.e., 800 mL) it could mean you are carrying too many solids in aeration, or it could mean you have excessive amounts of filamentous bacteria. If you have poor settling sludge, try running a diluted settling test. To do this, take your MLSS sample and pour half into the settleometer and fill the rest with treated effluent. If settling improves it suggests that you are carrying too many solids and need to waste. If your settling does not improve then it is time to bust out the microscope and take a look at your mixed liquor. If you see a ton of "spaghetti strings" you have a filament problem. Remember you need some filaments (they help form the backbone of your floc structure) but having too many will interfere with your settling. I could spend all day talking about process control but remember that process control is the tool that you have in your toolbox that will help you provide a happy environment for the microorganisms in your plant.

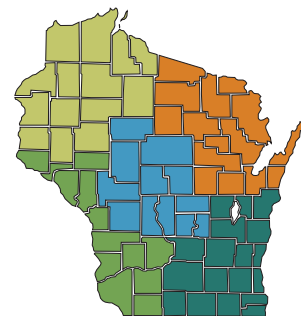
When your daily process control checks are complete (if you have enough time), then it is a good idea to do some preventative maintenance on your equipment. The preventative maintenance that you perform will depend on the size of your system and what kind of equipment you have. If you have sludge thickeners (drum or gravity belt) it is a good idea to wash down the equipment after you have completed your thickening. If you let sludge harden inside your drums or on the belts it can become very difficult to clean later. Staying on top of your lubrication schedules is also very important. Remember to check your O & M manuals for lubrication needs (e.g., type, volume, and frequency) and document all maintenance!!! Document every time you do maintenance because you should not have to commit maintenance to your memory. Also remember this – over greasing is just as bad (maybe even worse) than under greasing equipment. Other preventative maintenance tasks can include cleaning or replacing air filters on blowers and HVAC equipment and changing belts on any belt driven equipment.

Days go by quickly for wastewater operators because there is so much to be done! Just remember to always keep safety in mind. No job is worth getting injured and remember the most important thing is making it home to your family at the end of your shift. Have a great summer and make time for some 12-ounce curls!

Tony

WRWA

Business Member List



120Water
A.Y. McDonald Mfg Co.
Abbyland Foods
ADAPTOR INC.
Advanced Drainage Systems Inc.
ADVANCED MICROBIAL SOLUTIONS
ADVANCED SAFETY TECHNOLOGY INC.
AECOM
Air Diffusion Systems
AMERICAN FLOW CONTROL
AMERICAN LEAK DETECTION
AMERICAN STRUCTURES INC.
Applied Technologies Inc.
Aqua – Pure of Wisconsin
AquaFix
Aqueous Vets, LLC
AUTOMATIC SYSTEMS CO.
AYRES ASSOCIATES
B & M TECHNICAL SERVICES
BADGER LABORATORIES
BADGER METER INC.
Baker Tilly Virchow Krause LLP
Baker Water Systems
Baxter & Woodman Inc.
BECHER-HOPPE
BioResource Services
Boardman & Clark LLP
cady Aquastore Inc.
CB&I Storage Tank Solutions, LLC
CBS SQUARED, INC.
CEDAR CORPORATION
CLARK DIETZ INC.
Classic Protective Coatings Inc.
Clearas Water Recovery
COATING RESOURCES, INC.
COMMERCIAL TESTING LAB INC.
Cooper Engineering Company Inc.
Copperhead Industries, LLC
CORE & MAIN
Crane Engineering Sales Inc.
CRESCENT ELECTRIC SUPPLY COMPANY
CRETEX SPECIALTY PRODUCTS
CTW CORPORATION
CUES, Inc.
Dakota Supply Group
DAVY ENGINEERING CO & DAVY LABORATORIES
DELTA 3 ENGINEERING, INC.
Diamond Maps

DIXON ENGINEERING INC.
DN Tanks
DONOHUE & ASSOCIATES, INC.
DORNER COMPANY
DRYDON EQUIPMENT INC.
EJ USA, Inc.
ENERGENECS INC.
EnviroTech Equipment Company, LLC
ETNA SUPPLY COMPANY
Faith Leak Detection Services, LLC
Fehr-Graham Engineering & Environmental
FERGUSON WATERWORKS – DAVIES
FIRST SUPPLY LLC
Fischer, Harris & Associates
Flow Control Automation, Inc.
Flow Measurement & Control
Flow-Rite Pipe & Sewer Services, LLC
Fluoramics, Inc.
FOCUS ON ENERGY
FORD METER BOX COMPANY
FUREY FILTER & PUMP
GENERAL ENGINEERING COMPANY INC.
GRAEF
Granse/Trio Sales
Great Lakes TV Seal Inc.
Great Northern Environmental
Great Plains Structures
GS Plant Optics
Hawkins Inc.
HYDRO CORP., INC
Hydro-Klean, Inc.
In-Control, Inc.
InfoSense, Inc.
INFRASTRUCTURE DL, LLC
INTEGRATED PROCESS SOLUTIONS INC.
J.F. Ahern Company
JAMES ORR COATING INSPECTION, LLC
JCM Industries, Inc.
JIM JOLLY SALES, INC.
JMB & Associates, LLC.
JWR INC.
Kapur & Associates Inc.
Kasco Marine
KLM ENGINEERING INC.
Kodru Mooney
KUNKEL ENGINEERING GROUP LLC
L.F. George, Inc.

L – R Meter Testing & Repair Inc.
L&S ELECTRIC, INC.
L.W. ALLEN, LLC
LAI, Ltd.
LANE TANK CO INC.
LRE WATER
M.E. Simpson Company Inc.
MACQUEEN EQUIPMENT OF WISCONSIN
Maguire Iron Inc.
MALLOY ELECTRIC
MARTELLE WATER TREATMENT INC.
Martenson & Eisele Inc.
Master Meter, Inc.
McCarthy Well Company
MCMAHON
McWane Ductile
MEAD & HUNT INC.
Metering & Technology Solutions
Metron-Farnier & Transparent Tech.
Mid America Meter Inc.
Midco Diving & Marine Services, Inc.
MIDWEST CHEMICAL & EQUIPMENT, INC.
MIDWEST METER, INC.
Midwest Testing
Monroe Truck Equipment, Inc.
Morgan & Parmley, LTD
Morton Safety
MSA PROFESSIONAL SERVICES
MUELLER COMPANY
MULCAHY/SHAW WATER INC.
MUNICIPAL WELL & PUMP
Musson Brothers, Inc.
NORTHERN LAKE SERVICE INC.
P.J. KORTENS & COMPANY INC.
Peterson and Matz, Inc.
Pittsburg Tank & Tower Maintenance Company
Primex
Prinsco, Inc.
Probiotic Solutions
PROCESS EQUIPMENT REPAIR SERVICES, INC.
Quality Flow Systems, Inc.
raSmith
R.H. Batterman & Company Inc.
RANGE DATA, INC.
Red Flint Sand & Gravel, LLC
REHAU - MUNICIPEX
R.N.O.W., INC.
RES

ROBERT E. LEE & ASSOCIATES INC.
Roth Professional Solutions
RUEKERT & MIELKE INC.
Sabel Mechanical LLC.
SEALING SYSTEMS INC.
SENSUS USA, INC.
SERVE IMPLEMENT, LLC.
SHANNON & WILSON, INC.
SHERWIN WILLIAMS
SHORT ELLIOTT
HENDRICKSON INC.
STAAB CONSTRUCTION CORPORATION
STARNET TECHNOLOGIES
Strand Associates Inc.
Subsurface Instruments, Inc.
SUBURBAN LABORATORIES, INC.
Synergy Sales LLC
TEAM LABORATORY CHEMICAL CORP.
THE EXPEDITERS, INC.
Thein Well Company
Therma-Tron-X, Inc.
TOWN & COUNTRY ENGINEERING, INC.
Tri-State Pump & Control, Inc.
UEMSI/HTV
United Systems & Software, Inc.
USA BLUEBOOK
USEMCO Inc.
UTILITY LOGIC
VANRITE PLUMPING INC.
VEOLIA ADVANCED SOLUTIONS
VERMEER-WISCONSIN INC.
VIERBICHER ASSOCIATES INC.
VISU-SEWER INC.
Water Conservation Services, Inc.
WATER SURPLUS
Water Tower Clean & Coat, Inc.
WATER WELL SOLUTIONS SERVICE GROUP INC.
WILLIAM/REID LTD.
Wisconsin Pump Works
Wisconsin Surplus Online Auction
WM Metering Technology LLC

Members in “**BLUE BOLD & ALL CAPS**” are Corporate Members
Members in “**RED BOLD & ALL CAPS**” are Corporate Gold Members



NO ONE ON EARTH IS MORE PASSIONATE ABOUT WHAT'S BELOW IT.

Since 1916 our life's work has been covered up – years upon years of labor buried well below the surface. The truth is, we'll probably spend another century plus going unmentioned and unnoticed. And that's perfectly fine with us. Because in our world, that's the sign of a job done right.



MUNICIPALWELLANDPUMP.COM | 800.383.7412



MUNICIPAL
WELL & PUMP

WELL DRILLING | PUMP SERVICES | WELL REHAB | SYSTEMS DESIGN



DON'T SETTLE FOR LESS THAN THE BEST

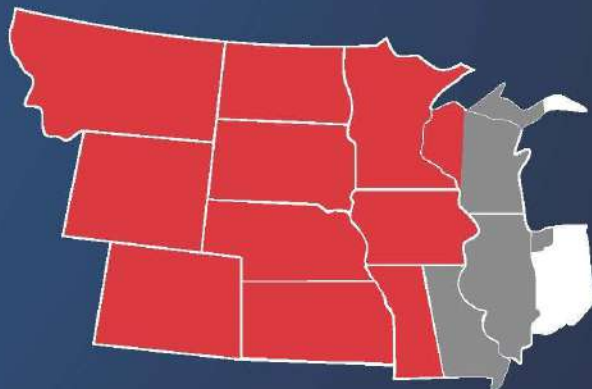
The interior of ALL Aquastore® tanks feature proprietary Vitrium™ coating technology enhanced with titanium dioxide for the toughest glass available.

GET THE QUALITY YOU DESERVE


- Tough TiO₂ glass formulation provides longer life
- White interior is easier to inspect than darker coatings
- Electrostatically applied base coat application ensures consistent quality
- Factory certified "holiday-free" sheets
- Designed for use in both cold and hot climates
- Designed, fabricated, shipped and supported within the USA



2021, Cady Aquastore Inc and Great Plains Structures. AQUASTORE® is a registered trademark and Vitrium is a trademark of CST Industries Inc.



 **Cady Aquastore** | 815-438-5678
cadyaquastore.com

 Great Plains Structures | 651-484-0111
greatplainsstructures.com



NATIONAL
RURAL WATER
ASSOCIATION

America's Largest Utility Membership

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 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 positive reasons to act now that you can present to your governing body.

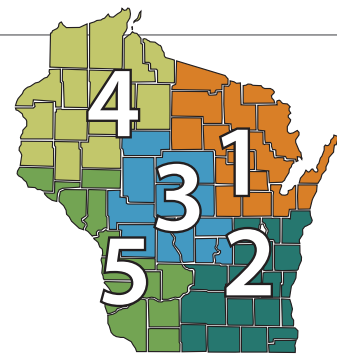
- Interest rates are at an all-time low.
- More project contractors are available, increasing the number of bids, potentially lowering project costs.
- Fuel costs are low, lowering pipe related costs.
- Most material costs for projects are down.
- Shipping costs for many have decreased.
- Road and water 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 economy and quality of life in rural America. Offering loans, grants and loan guarantees are some of the ways Rural Development is supporting rural America.

WRWA

System Member List



DISTRICT 1 (Northeast)

**2YK, LLC
 Algoma
 *Allouez
 Antigo
 *Ashwaubenon
 Bailey's Harbor WWTP
 Bear Creek
 Bellevue
 Birnamwood
 Black Creek
 Bonduel
 Bowler
 Brazeau Sanitary System #1
 Cecil
 Clintonville
 Coleman
 Combined Locks
 Crandon
 Crivitz
 Dale Sanitary District No. 1
 Darboy Sanitary District #1
 *De Pere
 Denmark
 Eagle River
 Egg Harbor
 Elcho Sanitary District
 Embarrass
 Ephraim
 Fish Creek Sanitary District #1
 Florence
 Forest County Potawatomi
 Freedom Sanitary District #1
 **Geiss Inc
 Gillett
 Goodman Sanitary District #1
 Grand Chute
 *Green Bay
 Greenville Sanitary District
 Gresham
 **Hiawatha Mobile Homes
 Estates
 Hobart
 Holland Sanitary District #1
 Hortonville
 *Howard
 Iola
 *Kaukauna
 Kewaunee
 Kimberly
 Krakow Sanitary District #1
 Lake Tomahawk Sanitary
 District No. 1
 Lakeland Sanitary District #1
 **Lakeland Village
 Lakewood Sanitary District #1
 Laona Sanitary District #1
 Lawrence Utility District
 Ledgerview
 Lena
 Little Chute
 Luxemburg
 Manawa
 *Marinette
 Marion

Mattoon
 Menominee Tribal
 *Merrill
 **Merrill Area Public Schools
 *Natural Beauty Growers
 New London
 Niagara
 Nichols
 Oconto
 Oconto Sanitary District #1
 Oconto Falls
 Oneida Nation Utility
 Peshtigo
 Phelps Sanitary District #1
 Pound
 Pulaski
 Rhinelander
 Russell Sanitary District #1
 Scandinavia
 Scott
 Seymour
 Shawano
 Shawano Lake Sanitary District #1
 Shiocton
 Sister Bay
 Sturgeon Bay
 Suamico
 Suring
 **Three Lakes Northern
 Sanitary District
 Three Lakes Sanitary District
 **Thunder Properties, LLC
 Tigerton
 Tomahawk
 Wabeno Sanitary District No. 1
 Waupaca
 Wausaukee
 Weyauwega
 White Lake
 **Wisconsin Veterans Home
 Wittenberg
 Wrightstown
 Wrightstown Sanitary District #1

DISTRICT 2 (Southeast)

**7 Mile Fair Inc.
 Adell
 Albany
 Algoma Sanitary District #1
 Allenton Sanitary District
 **Antioch Storage LLC
 Arlington
 Ashippun Sanitary District
 **Asset Development Group Inc.
 **Autumn Ridge Water
 System, LLC
 *Beaver Dam
 Belgium
 Belleville
 *Beloit
 Beloit Sewer Department,
 Town of
 Black Earth
 Bloomfield
 Blue Mounds

Brandon
 Brillion
 Bristol
 Brodhead
 *Brookfield, Town of
 Brookfield, City of
 Brooklyn
 Brownsville
 Browntown
 Burlington
 Caledonia Water Utility District
 Cambria
 Cambridge
 Cambridge – Oakland
 Wastewater Commission
 Campbellsport
 Cedarburg
 **Cedar Crest Specialties Inc
 Cedar Grove
 **Cedar Lake Home
 Chilton
 Cleveland
 Clinton
 Clyman
 Columbus
 **Concordia University
 Wisconsin
 Consolidated Koshkonong
 Sanitary District
 Cottage Grove
 **Country Aire Mobile
 Home Park
 Country Estates Sanitary
 District
 **Country View Estates
 Cross Plains
 **Crystal Lake RV Park
 *Cudahy
 **Dakota Capital Park
 Dane
 **Dairyfood USA, Inc.
 Darien
 De Forest
 Deerfield
 Delafield
 Delavan
 Delavan Lake Sanitary District
 **Don's Mobile Manor Inc
 Dousman
 Eagle
 East Troy, Town of
 East Troy, Village of
 Eden
 Edgerton
 Elkhart Lake
 Elkhorn
 Evansville
 Fairwater
 Fall River
 *Fitchburg
 *Fond du Lac
 Fontana
 Footville
 **Foremost Farms USA
 *Fort Atkinson

*Fox Crossing
 Fox Lake
 Fox Point
 Franklin
 Fredonia
 Friesland
 Fulton
 **Geneva National Services
 Genoa City
 *Germantown
 Glenbeulah
 *Glendale
 **Great Valve Homes Inc.
 *Greendale
 **Hale Park Meadows Water Trust
 Harmony Grove Sanitary
 District
 Harrison
 Hartford
 Hartland
 **HB Performance Systems Inc.
 Hilbert
 **Holy Family Convent
 Horicon
 Hustisford
 Iron Ridge
 Ixonia Sanitary District #1
 Jackson
 *Janesville
 Jefferson
 Johnson Creek
 Juda Sanitary District
 Juneau
 Kellnersville
 Kewaskum
 Kiel
 **Kikkoman Foods Inc
 Kohler
 **Lad Lake Inc
 Lake Como Sanitary District #1
 Lake Geneva
 **Lake Meadows Water Trust
 Lake Mills
 Lannon
 LeRoy Sanitary District #1
 Lodi
 Lomira
 Lowell
 *Madison
 *Manitowoc
 Maple Bluff
 Maribel
 Marshall
 Mary Hill Park Sanitary District
 Mayville
 Mazomanie
 McFarland
 *Menasha
 Menasha Utility District
 Menomonee Falls
 *Middleton
 Milton
 *Milwaukee
 Mishicot
 Monona

*Monroe
 Monticello
 Mount Horeb
 Mukwonago
 *Muskego
 **Natural Oven's Bakery Inc.
 *Neenah
 New Berlin
 New Glarus
 New Holstein
 North Fond du Lac
 Northern Moraine Utility
 Commission
 *Oak Creek
 Oakfield
 *Oconomowoc
 Omro
 Oostburg
 Oregon
 Orfordville
 *Oshkosh
 Palmyra
 Pardeeville
 **Pat's Services, Inc.
 *Pewaukee, City of
 Pewaukee, Village of
 *Pleasant Prairie
 Plymouth
 **Plymouth Joint School District
 Plymouth Town Sanitary
 District #1
 Portage
 Poynette
 *Racine
 **Rainbow Lake Manor
 Randolph
 Random Lake
 Reedsville
 Reeseville
 Rio
 Ripon
 **Robert William Park Water Assoc
 Rochester Sewer Department
 **Rock Prairie Montessori School
 **Rock River Leisure Estates
 Cooperative
 Rosendale
 S & R Egg Farm, Inc.
 **St. Benedict's Abbey
 St. Cloud
 St. Nazianz
 Salem Utility District
 Saukville
 **Shady Hill Mobile Home Park
 Sharon
 Sheboygan, Town of
 Sheboygan Falls
 Sherwood
 *Shorewood
 Shorewood Hills
 Slinger
 Somers
 *South Milwaukee
 Stoughton
 *Sun Prairie

*Associate Members (Over 10,000 pop.) **Other Than Municipal

WRWA SUMMER 2023 / www.wrwa.org

**Sunnyfield Acres Water Association	Hixton	Bloomer	*River Falls	Hazel Green
Sussex	Hustler	Boyceville	Roberts	Highland
**The Knolls Water Co-Operative	Junction City	Boyd	Saxon Sanitary District #1	Hillsboro
Theresa	Kendall	Bruce	Sheldon	Hollandale
**Tremain Mobile Home Park	Kronenwetter	Butternut	Shell Lake	Holmen
**Trevor-Wilmont	Little Green Lake Protection & Rehab. District	Cable Sanitary District #1	Siren	Independence
Consolidated Grade School District	Loyal	Cadott	Solon Springs WWTF	Ironton
**Twin Lakes Park Co. Op. Inc	Lyndon Station	Cameron	Somerset	Kieler Sanitary District #1
*Two Rivers	Maine	Catawba-Kennan Joint Sewage Commission	Spooner	*La Crosse
Union Grove	Marathon	Centuria	St. Croix Falls	La Farge
Valders	Markesan	Chetek	Stanley	La Valle
Verona	*Marshfield	*Chippewa Falls	Star Prairie	Lake Delton
Waldo	Mauston	Clayton	Stone Lake Sanitary District	Lancaster
Walworth	Medford	Clear Lake	**Stresau Lab Inc	Lincoln Sanitary District #1
*Walworth County Metro Sewerage District	Melrose	Clover Sanitary District #1	*Superior Water Light & Power	Linden
Waterford	Merrillan	Colfax	Superior, Village of	Linden Sanitary District No. 1
Waterloo	Milan Sanitary District	Cornell	**T.A.P. Investments	Edmund
*Watertown	Milladore	Cumberland	Tony	Livingston
*Waukesha	Montello	Dallas	Trade Lake	Loganville
Waunakee	Mosinee	Deer Park WWTP	Turtle Lake	Lone Rock
*Waupun	Necedah	Downsville Sanitary District	Washburn	Maiden Rock
*Wauwatosa	Neillsville	Dresser	Webster	**Marell Mobile Home Courts
**Wendorf Enterprises 2 LLC	Nekoosa	Drummond Sanitary District #1	Weyerhaeuser	Merrimac
*West Bend	Neshkoro	Elk Mound	Wheeler	Mineral Point
Westport	New Lisbon	Emerald – Greenwood Sanitary District #1	Winter	Mondovi
**Wheatland Estates Mobile Home Park	Norwalk	Exeland	**Wisconsin Structural Steel	Montfort
**Wheel Estates, Inc Mobile Home Park	Oakdale	Fifield Sanitary District #1	Woodville	Mount Hope
Whitelaw	**Ocean Spray Cranberries, Inc. - Tomah	Frederic		Muscoda
*Whitewater	Owen	Glen Flora	DISTRICT 5 (Southwest)	Nelson
Williams Bay	**Pineland Park Enterprises LTD	Glenwood City	**Advanced Plumbing Systems	North Freedom
Wind Point	Pittsville	Glidden Sanitary District	Alma	*Onalaska
Windsor Sanitary District #1	Plainfield	Grandview Sanitary District #1	Altoona	Ontario
Winneconne	Plover	Grantsburg	Arcadia	Osseo
**Winneconne Community School District	Port Edwards	Hammond	Arena	Patch Grove
Wyocena	Princeton	Hawkins	Argyle	Pepin
	Redgranite	Hayward	Augusta	Pigeon Falls
	Rib Lake	Hudson	Avoca	**Pinewood Court Inc.
	Rib Mountain Sanitary District	Hurley	Bagley	Plain
	Rome	Iron River Sanitary District #1	Bangor	*Platteville
	Rosholt Sewer Commission	Joint Water Quality	Baraboo	Potosi-Tennyson
	Rothschild	Commission of Danbury & St. Croix Chippewa Indians of WI	Barneveld	Prairie du Chien
	Schofield	Knapp	Bay City	Prairie du Sac
	Silver Lake Sanitary District	Knight	Belmont	Prescott
	Sparta	Lac Courte Oreilles Public Works Department	Benton	Readstown
	Spencer	Ladysmith	Blair	Reedsburg
	Stetsonville	Lake Hallie	Blanchardville	Rewey
	*Stevens Point	Lake Holcombe Sanitary District #1	Bloomington	Richland Center
	Stratford	Luck	Blue River	Ridgeway
	Taylor	Madeline Sanitary District	Boscobel	Rock Springs
	Thorp	Manitou Falls Sanitary District #1	Bridgeport Sanitary District	Rockland
	Tomah	Mason	Campbell	Sauk City
	Union Center	Mellen	Cassville	Seneca Sanitary District #1
	Unity	*Menomonie	Cazenovia	Sextonville
	Vesper	Mercer Sanitary District #1	Chaseburg	Shelby Sanitary District #2
	Volk Field	Milltown	Cobb	Shullsburg
	Warrens	Minong	Cochrane	Soldiers Grove
	*Wausau	Montreal	Coon Valley	South Wayne
	Wautoma	New Auburn	Cuba City	Spring Green
	Westboro Sanitary District #1	New Richmond	Darlington	Spring Valley
	Westfield	North Hudson	**De Soto Area School District	**St. Croix Improvement, Inc.
	*Weston	**Northwood School District	**Dell Creek Estates	St. Joseph Sanitary District #1
	Whiting	Osceola	Dickeyville	Stoddard
	Wilton	Park Falls	Dodge Sanitary District #1	Strum
	Withee	Phillips	Dodgeville	Trempealeau
	Wonewoc	**Pleasant Valley Properties of WI, LLC	Durand	Viola
		Poplar Wastewater	Eastman	Viroqua
	DISTRICT 4 (Northwest)	Port Wing Sanitary District	Eleva	Wauzeka
	Almena	Prentice	Ellsworth	West Baraboo
	Amery	Radisson	Elmwood	West Central Wisconsin
	Ashland	Red Cliff North	Ettrick	Biosolids Facility
	Baldwin	Rice Lake	Fairchild	West Salem
	Balsam Lake		Fall Creek	Westby
	Barron		Fennimore	Whitehall
	Bayfield		Fountain City	Wiota Sanitary District
	Bell Sanitary District #1		Galesville	Wisconsin Dells
	Birchwood		Gays Mills	
			Genoa	
			Gratiot	

*Associate Members (Over 10,000 pop.) **Other Than Municipal

UP THE CREEK



Ken Blomberg,
*WRWA past
Executive Director*

Back in the day, when I worked for a living with Rural Water, I spent many hours on the road traveling across the state. Twenty-five years logging thousands of miles, brought me great memories visiting most of the communities that make up Wisconsin.

During the summer months, I'd gravitate on occasion to the shores of our two Great Lakes and Mississippi's River Road. Not only were temperatures cooler near those bodies of water, but there was something therapeutic about spending down time sitting along the banks of our state's greatest water resources.

Today, now in retirement, I still find myself drawn to the rivers and lakes closer to our home along the creek. A family favorite is the nearby Wisconsin River and Lake DuBay - a large reservoir that was created just before WWII. The lake's namesake is buried and rests for eternity along its banks.

The inscription on his grave marker reads, "Son of a Menominee Indian Princess, Son-in-Law of Chief Oshkosh - Treaty Maker, Interpreter, Indian Trader, Firm Friend of White Man." Those words grace a large, polished granite headstone of John Baptiste DuBay, who lived in the area from 1810 - 1887 and was buried in nearby Knowlton Cemetery. As the crow flies, that's just a few miles north of our place, on the opposite side of the Wisconsin River. A state historical marker in his honor also stands along our side of the river, near a cranberry bog and county campground, both named DuBay.

The sign talks about the remnants of this fur trader and frontiersman's trading post, that lie at the bottom of the lake also bearing his name - and according to locals, the flowage created by damming the Wisconsin River in 1942, also covered a cemetery near the post. The dam was primarily created to generate power for paper mills to the south and provide flood control in the spring. As a result, it backed up over 6,700 acres, created more than 42 miles of shoreline and takes in the flow of 12 inlet streams. There's plenty of open water for speed, sail and pontoon boaters, while its backwaters and islands are home to fishers and hunters.

Lake DuBay has become our summer home of sorts - since the boss and I long ago gave up the dream of a cabin "up north", trading that idea instead for a floating cottage on

the sprawling body of water in our own backyard. It was on her birthday, number forty, that we took the plunge, so to speak. "Mom's Boat" was christened and ever since, evening and weekend pontoon outings on the lake have provided the necessary escape from our daily routine. Over the years, whether fishing, swimming, or just plain touring, we've learned to love all the huge lake has to offer.

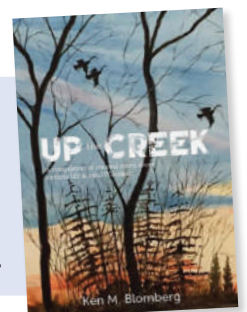
Fishing opportunities abound, with nearly every native game fish species at hand - the exception being sturgeon and trout. But in the case of sturgeon, one need only to look downstream, just over the dam - as they're known to bump their snouts on the gates. Recently, white bass - of the Wolf River variety - have shown up in creels of fishermen seeking walleye and panfish. My good friend DNR Dale, and others in the know, aren't too keen on the idea of these recent invaders. You see, this unauthorized plant may cause havoc down the line, when competition for forage fish ensues.

As for our family, we spend most of our fishing capital on smallmouth bass and walleye. Working the shore may do well to stay close to home and give DuBay a try.

When fishing gets slow, we might head for a burger or fish fry at a lakeside bar. More often, it's grilling brats on the pontoon, or watching the sail boat races or water ski shows at South Beach. Then there's always the simple pleasure of looking for driftwood on the shoreline.

At the time the lake was fashioned with a dam and dike in 1942, the original headstone for its namesake was replaced by a beautiful piece of Wausau granite, thanks to George Mead Sr. of Consolidated Papers, Inc. I'm not sure why I drove past the gravesite for so many years without stopping, but since the day it happened, my appreciation for the area's history has certainly been rekindled and the name DuBay has taken on new meaning.

Autographed copies
of Blomberg's *Up the Creek,*
Letters from Art and Wisconsin
Bird Hunting Tales are
available from the author at
eaupleinekennels@gmail.com.



24/7 Emergency Line 920-579-2028



SPECIALIZING IN MECHANICAL & EQUIPMENT INSTALLATION

Waste water maintenance & equipment restoration • Pump & blower repair
Electrical panel and controls • Flow meters & back flow preventers • Plumbing services
Mechanical piping services, all types • Confined space entry • Crane service
Sludge cake hauling • Pipe freezing 1 1/2" thru 6" • Gearboxes and valves • Bypass pumping

www.sabelmechanical.com

Reduce costs, save time and improve reliability

RELIABLE WATER & SEWER PRODUCTS SINCE 1976

Water Products

Industry-leading valve box stabilizers make for easy installation on all gate and butterfly valve types and sizes. ADAPTOR water products eliminate valve box shifting while providing stability.

Sewer Products

Simple-to-install seals and wraps protect the integrity of the collection system by stopping infiltration into manholes and catch basins. Manufactured to allow movement from thermal expansion and contraction.



ADAPTOR
adaptorinc.com

THE WATER EXPERTS.



**DRINKING.
STORAGE.
WASTEWATER.**



888-364-7272

Wauwatosa • De Pere
Middleton • La Crosse

**Mead
& Hunt**

EXPERIENCE EXCEPTIONAL

meadhunt.com

B&M Technical Service

QUALITY SERVICE, AFFORDABLE SOLUTIONS

Call (715) 228-7604 - Visit bmtechservice.com



TROPHY SERVICES SAVINGS

Full service process control integration and expertise for fresh water and wastewater treatment plants.

- AERATION
- ALARM SYSTEMS
- CHEMICAL FEED
- CONTROLS
- CROSS CONNECTIONS
- INSTRUMENTATION
- LIFT STATIONS
- LEVEL MEASUREMENT
- PROCESS EQUIPMENT
- PUMPS/ROTARY
- SCADA/TELEMETRY
- WATER SYSTEMS

SOME WATER LEAKS AREN'T SO EASY TO FIND



TONY SCHRANTZ
612-600-8716
tony.schrantz@gmail.com

We can **SURVEY** your city this Spring and find the leaks that aren't surfacing. Then give you a report, so you can schedule the repairs.



Providing Lab Analysis
For Wisconsin Water
Systems



Division of Davy Engineering Co.

115 6th Street S. • P.O. Box 2076 • La Crosse, WI 54602-2076
608-782-3130 • Fax 608-784-6611 • www.davyinc.com



DIXON ENGINEERING, INC. *Engineering and Inspection Services for the Coating Industry*

Since 1981, Dixon Engineering has been recognized as a leader in the storage tank and coating inspection industry. Our clientele consists of industrial, municipal, state, and federal clients. Dixon has experience with virtually any type of potable water storage tank and coating systems. For cost effective solutions to your storage and coating maintenance needs - specify Dixon Engineering. Let our expertise help you preserve the value of your facilities.

Dixon offers the following services to meet your engineering and inspection needs:

Inspection Services

- Tank Maintenance Inspections
- Underwater (ROV) Inspections
- Warranty Inspections
- Underwater (Dive) Inspections
- Tank Coating Applications
- Concrete Coating Applications
- New Tank Construction Inspections
- Antenna Installation Inspections
- Welding/Repair Tank Inspections

Engineering Services

- Tank Repainting Specifications
- Specification Review
- Cathodic Protection Specifications
- Antenna Design and Review
- Tank Structural Repair Specifications
- Tank Rehabilitation
- Tank Demolition
- Coating System Failure Analysis
- Treatment Plant Coating Specifications



Our staff is comprised of engineers and NACE, SSPC, AWS, and API certified inspectors.

Visit our website at www.dixonengineering.net for information about these and other services.

Corporate Office
1104 Third Avenue
Lake Odessa, MI 48849
dixon@dixonengineering.net

Dixon Engineering, Inc.
www.dixonengineering.net
(800) 327-1578

Wisconsin Office
5307 South 92nd St., Suite 125
Hales Corner, WI 53130
wisconsin@dixonengineering.net



EVERYTHING YOU NEED

Your One-Stop Shop for Water & Wastewater Supplies

USABlueBook®

800-548-1234 • www.usabluebook.com



DIXON ENGINEERING INC.

Engineering and Inspection Services for the Coating Industry

Joseph T. Hoban, P.E. Vice President
joe.hoban@dixonengineering.net
920.470.0957 Cell

Kayla Mulcahy Project Manager
kayla.mulcahy@dixonengineering.net
414.429.3430 Cell

INTEGRATED WATER QUALITY SOLUTIONS



WATER



WASTEWATER



STORMWATER

ClarkDietz

Engineering Quality of Life®

ILLINOIS / INDIANA / KENTUCKY / WISCONSIN / clarkdietz.com



Visu-Sewer

Inspect. Maintain. Rehabilitate.

- I&I Investigations ■ Chemical Grouting
- TV Inspection ■ Pipe Lining
- Sewer Cleaning ■ Manhole Lining

800.876.8478 ■ www.visu-sewer.com

Serving municipalities & utilities since 1975

SMART WATER IS: THE WIDEST RANGE OF METERING SOLUTIONS

CONTACT YOUR LOCAL BADGER METER ACCOUNT MANAGER TO DISCOVER MORE

Jennifer Buetow
(414) 807-3703
jbuetow@badgermeter.com



Badger Meter

SMART WATER IS BADGER METER

badgermeter.com/WideRange



Ruekert • Mielke

Let Ruekert & Mielke, Inc. focus on your infrastructure so you can focus on your community!

WAUKESHA, WI • KENOSHA, WI • MADISON, WI • CHICAGO, IL
GLOBAL WATER CENTER, WI • FOX VALLEY, WI
www.ruekertmielke.com



GRÄEF

collaborate / formulate / innovate

125 South 84th Street, Suite 401
Milwaukee, WI 53214-1470
414 / 259 1500
414 / 259 0037 fax
www.graef-usa.com

Full-Service Water & Wastewater Solutions

- Drinking Water
- Wastewater
- Renewable Fuels/ Waste-to-Energy
- Stormwater Management
- Public Safety & Municipal Management
- Funding Strategies



McMAHON
ENGINEERS ARCHITECTS

SERVICE INSPIRED SINCE 1909 920 751 4200 MCMGRP.COM
WISCONSIN | ILLINOIS | INDIANA



ADVANCED SAFETY TECHNOLOGY, INC.

Safety Consulting & Training

VINCENT MATARRESE III
President

14301 W. Lincoln Avenue Office: (262) 796-8605
New Berlin, Wisconsin 53151 Fax: (262) 796-8605

E-mail: vmatarrese.astinc@yahoo.com
Website: advancedsafetytechnology.com



Solutions for You

Robert E. Lee & Associates, Inc.
Engineering • Surveying • Environmental Services

800.986.6338
1250 Centennial Centre Blvd.
Hobart, WI 54155 • www.releeinc.com



Professional Civil, Municipal & Structural Engineering
Architecture • Grant Writing • Land Development • Planning & CADD Services

875 South Chestnut Street
Platteville, Wisconsin 53818
Website: www.delta3eng.biz

Phone: (608) 348-5355
Fax: (608) 348-5455
Email: mail@delta3eng.biz



WILLIAM/REID

A Division of Gasvoda & Associates, Inc.

Post Office Box 397
Germantown, WI 53022
www.williamreidltd.com

Toll-Free: (888) 272-1722
Phone: (262) 255-5420
Fax: (262) 255-7495
contact@williamreidltd.com



www.tcengineers.net

CREATIVE SOLUTIONS FOR
YOUR COMMUNITY SINCE 1981

Madison
(608) 273-3350

Rhineland
(715) 420-0579

Kenosha
(262) 925-3210

water/wastewater • stormwater • municipal • GIS/mapping



**THE WATER
EXPERTS.**

**Mead
& Hunt**

888-364-7272

Wauwatosa | De Pere
Middleton | La Crosse

EXPERIENCE EXCEPTIONAL

meadhunt.com

vierbicher

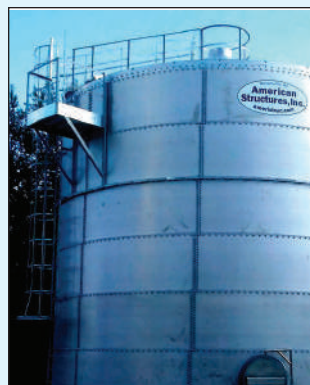
planners | engineers | advisors



vision to reality

www.vierbicher.com

Madison • Reedsburg
Milwaukee • Prairie du Chien
800-261-3898



**American
Structures, Inc.**

Bolted Stainless Steel Tanks
715-235-4225
ameristruc.com

American Made Bolts & Stainless
Steel — Manufactured to ANSI/
NSF 61, AISI 304, AWWA D103,
ASTM, ACl... & others

AECOM®

AECOM

200 Indiana Avenue
Stevens Point, WI 54481

T 715.341.8220 F 715.341.7390
www.aecom.com

107 Parallel Street
Beaver Dam, WI 53916
920-356-9447 (office)
920-356-9454 (fax)
www.kunkelengineering.com



KUNKEL
engineering
group

Building Relationships that Build Communities

HYDROCORP™

THE SAFE WATER AUTHORITY™

**Cross-Connection Control
Water Meter Installation/Change-Out**

800.315.4305 | HYDROCORPINC.COM

2665 S. Moorland Rd. | Ste. 209 | New Berlin, WI 53151

PJKco.

Industrial Control Solutions

P. J. Kortens and Company, Inc.
1985 W. Packard Street
Appleton, WI 54914

Bill Kortens
E-mail: b.kortens@pjkco.com
Website: www.pjkco.com

Direct 920/358-2921
FAX: 920/730-8931
Ph: 920/730-9023, ext 2921



Ph: (262) 932-2100
Fax: (262) 932-2101

Office: N61W23043 Silver Spring Dr.
PO Box 189
Sussex, WI 53089-0189
Email: sales@dornerco.com
Web: www.dornerco.com



Jeffery D. Williamson

P: 262-827-9201 ■ F: 262-827-9203

C: 414-881-3778 ■ E: jwilliamson@drydon.com

3033 S. 128th St ■ New Berlin, WI 53151 ■ www.drydon.com



NEW OFFICE
N57 W6316 Center Street
Cedarburg, WI 53012

P: (262) 241-1199
F: (262) 241-4997
E: info@mulcahyshaw.com

MulcahyShaw.com

Automatic Systems Co.

*Systems Integrator Serving
the Midwest Since 1967*

- SCADA
- Telemetry
- Motor Control
- Instrumentation
- Calibration Services
- 24/7 Service & Support



(651) 631-9005
www.automaticsystemsco.com

Dave Haselhorst
John Yineman
Marc Hartman

www.teamlab.net

**TEAM LABORATORY
CHEMICAL CORPORATION**



PO Box 1467
Detroit Lakes, MN 56502
Phone: 800-522-8326

Dave 651-485-4659
John 563-590-4790
Marc 218-841-5172



715-845-8000
Wausau, Wisconsin
becherhoppe.com

- Wastewater
- Storm Water
- Drinking Water
- Municipal
- Site Development
- Dams
- Roads/Highways
- Survey
- Real Estate
- Grants

**Process
Equipment
Repair
Services, Inc.**

- Asset Management/Protection
- Sole Source Responsibility
- Installation, Repairs, Inspections
- Upgrades/Retrofits
- Complete Reconditioning
- Design Modifications
- Fabrications
- 45+ Years- Bonded- Insured

**Water and Wastewater Process Equipment
Installation, Repair and Rehabilitation**

LaMont Albers & Associates

PERSLaMont@aol.com - 414-412-4404 - West Bend, WI



ENGINEERS • SCIENTISTS • CONSTRUCTORS

TRUSTED For Good Reason.

800.748.7423 : symbiontonline.com

CALL US FIRST. WATER • SEWER
UTILITIES • GAS

When the job has to be
done right the first time around, call
American Leak Detection.

Finding hidden leaks under concrete, asphalt, in walls, and more.



**AMERICAN
LEAK
DETECTION**
THE ORIGINAL LEAK SPECIALISTS™

Municipal ♦ Commercial ♦ Industrial ♦ Residential

**LEAK DETECTION
888.345.5325**

AmericanLeakDetection.com

FIRST SUPPLY®

First Supply maintains a complete inventory of municipal & fluid handling equipment and supplies.

- Ductile Iron Pipe
- Fittings, Valves, Boxes, Hydrants & Brass Goods
- PVC Sewer & Water Main
- Polyethylene Storm Sewer
- Sewage, Sump, Effluent, Water & Turbine Pumps
- And many more great products!

1SUPPLY.COM

SEAL IT!

Save money and gain effective capacity quickly and affordably



SEALING SYSTEMS, INC.
9350 County Road 19
Loretto, MN 55357
Toll Free: (800) 478-2054
Go to www.ssisealingsystems.com to
see details on all our products.

Infi-Shield External Seal

Serwe Implement, LLC

In Business Since 1937

Archie Serwe

N11889 Hwy 175, Brownsville, WI 53006

Cell: 920-602-0938

Fax: 920-269-1134

Parts/Service: 920-583-6091

archie@serweinc.com

Tiger Mowers Vacall Tenco
Deweze Mowers Superior Broom
Harper/Goosen Cascade Refuse Carts



Cretex
Specialty Products

www.cretexseals.com

N25 W23790 Commerce Circle - E
Waukesha, WI 53188
(262) 542-8153 • (800) 345-3764
Fax (262) 542-0301
info@cretexseals.com

Stopping inflow for 35 years

WATER AND WASTEWATER SYSTEMS ARE ENERGY-INTENSIVE

When you're in for reducing your
system's energy costs, Wisconsin is
in for keeping money in state.

Contact FOCUS ON ENERGY® today
to get in on energy efficiency!

888.623.2146 • focusonenergy.com

REDUCING ENERGY WASTE ACROSS WISCONSIN
©2021 Wisconsin Focus on Energy



Mechanical & General Contractor

Municipal - Industrial
Turnkey- Rebuilds- Retrofits

Preventative Service Maintenance

Contact Our Service Department

Visit our website

servicedepartment@staabco.com

www.staabco.com

Ph: 715-387-8429 Fax 715-384-4846

SCC VALUES: SAFETY; EXCELLENCE; TEAM; TRUST; RESPECT

Mueller Co.

Reliable Connections®

1019 Poplar Street
West Bend, WI 53095

muellercompany.com



Randy Atwood

Sales Representative

Mobile: 651-315-6635

RAatwood@fordmeterbox.com

The Ford Meter Box Company, Inc.

775 Manchester Avenue, P.O. Box 443

Wabash, Indiana USA 46992-0443

Phone: 260-563-3171 / Fax: 800-826-3487

INTEGRATED PROCESS SOLUTIONS

**JIM
GROOSE**

SENIOR VICE PRESIDENT
BUSINESS DEVELOPMENT

OFFICE
800.919.0888

DIRECT
815.240.3705

EMAIL
jim.groose@watersurplus.com

ADDRESS
726 Beacon Street, Loves Park, IL 61111

WWW
WaterSurplus.com



**Starnet
TECHNOLOGIES**

8520 Hollander Drive

P.O. Box 374

Franksville, WI 53126-0374

(262) 886-0228

Sales@Starnet-WI.net

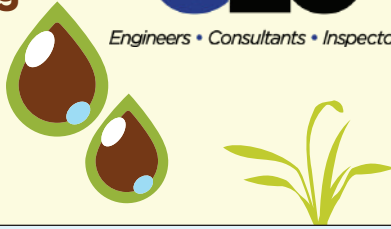
www.StarnetTech.com

GeneralEngineering.net

General Engineering Company



608. 742. 2169
Silver Lake Dr.
Portage, WI 53901



THE EXPEDITERS, INC.

Sewer Lateral and Sewer Inspectors
Manhole Rehabilitation



1-800-657-0879
Cell 262-719-2436
theexpediters@aol.com

139 N. Main Street
Dousman, WI 53118
www.theexpediters.net



**SUBURBAN
LABORATORIES**

Corporate Headquarters

1950 S Batavia Ave Ste. 150
Geneva, IL 60134
(800) 783-5227

PATRICK LIBERG
Compliance Services Manager

(920) 459-2500 x312

(262) 419-0481

PatL@suburbanlabs.com

10520 N. Baehr Rd, Ste. J
Mequon, WI 53092

www.suburbanlabs.com



JR Raab
Regional Sales Specialist

2304 Kelbe Drive | Little Chute, WI 54140
O: 920.687.9988 • M: 715.216.4188
jraab@vermeerwisconsin.com

vermeerwisconsin.com



WRWA Mission:
Assisting, educating and
representing our members in
the Water & Wastewater Industries.

COATING RESOURCES, INC.

Independent Representative of Tnemec Company, Inc.
625 St. Louis Street, Suite 12
Hopkins, MN 55343

TEL: 952-746-1909 TOLL FREE: 877-TNEMEC1
MOBILE: 612-916-5360 FAX: 952-746-2086
kevin@coatingresourcesinc.com
www.tnemec.com/cr



KEVIN RENSLOW, CSI COT
NACE #21992
Coatings Consultant

SHANNON & WILSON

Mark A. Rutkowski, PG

Senior Associate
Madison Office Manager

* Licensed in WI

5325 Wall Street, Suite 2355
Madison, WI 53718

Phone: (608) 442-5223

Direct: (608) 960-7104

Mobile: (414) 477-0279

mark.rutkowski@shanwil.com

shannonwilson.com

Offices Nationwide

UtilityLogic®



UTILITY-LOGIC.COM
877-544-2700

Product solutions and technical training for
utility locating and operator safety.



BADGER LABS
ANALYTICAL LABORATORY & ENVIRONMENTAL SERVICES
EST. 1966

John H. Larson
President/Owner

T 920.729.1100

C 920.915.9359

F 920.729.4945

E jlarson@badgerlabs.com

- Neenah, WI
- Green Bay, WI
- Stevens Point, WI

Your Project Partner for Groundwater Solutions

- ✓ Well and Well Field Design and Rehabilitation
- ✓ Groundwater Supply Development and Wellhead Protection
- ✓ Groundwater Modeling, GIS Modeling, and Spatial Analysis
- ✓ Aquifer Storage and Recovery and Managed Aquifer Recharge

WANT TO LEARN MORE?

Roscoe Sopiwnik, PG, GISP
Project Manager / Sr. Hydrogeologist
651-341-8199, roscoe.sopiwnik@LREwater.com



ROCKY MOUNTAIN | MIDWEST | SOUTHWEST | TEXAS



Furey Filter and Pump

an otp industrial solutions company



Paul Ludwig

aftermarket and service sales manager

n117 w19237 fulton drive
germantown, wi 53022

240.651.4932 CELL
262.293.0333 MAIN

paul.ludwig@fureyfp.com

fureyfp.com



MP#855599

Leader in trenchless water and sewer replacement.

Trenchless Sewer & Water Pipe Replacement,
Directional Drilling, Hydro Excavation

Phone: 920-465-8500 • **Cell:** 920-621-4885

2229 Cty Rd QQ, Green Bay, WI 54311

ryan@vanriteplumbing.com • www.vanriteplumbing.com

Chance Curtis

SALES MANAGER



27385 110th Street NW
Zimmerman, MN 55398 USA



T: 763-856-0110

F: 866-408-1108

chance.curtis@sensus.com

www.sensus.com

INFRASTRUCTURE



DEFECT DETECTION SERVICES

Robert Muchka

(262) 370-7389

bob@infrastructuredl.com

P.O. Box 653

Oconomowoc, WI 53066

www.infrastructuredl.com



WATER, WASTEWATER + STORMWATER ENGINEERING

920.208.0296 | DONOHUE-ASSOCIATES.COM



L & S Electric, Inc.

5101 Mesker Street

Post Office Box 740

Schofield, WI 54476-0740 USA

SAMANTHA R KRAUSE

Marketing & Communication Manager

Toll Free 800.283.8332
www.lselectric.com

Direct 715.241.3224
Cell 715.544.9387
E-mail skrause@lselectric.com

Wisconsin Rural Water Association Advertise Online:

- Include company contact information, logo and link to webpage
- All listings subject to WRWA approval.
- 12 month or monthly terms
- **WRWA Members:** \$700 per year or \$60 per month
- **Non-Members:** \$1,000 per year or \$85 per month

If your company would like to sponsor the WRWA weekly E-News or advertise on the WRWA website, please contact:

Rural Water office WRWA@wrwa.org

www.wrwa.org

WRWA Calendar

WRWA Outdoor Expo	August 24, 2023
Office Closed for Labor Day	September 4, 2023
Office Closed for Thanksgiving	November 23 & 24, 2023
Office Closed for Christmas Eve (1/2 Day)	December 22, 2023
Office Closed for Christmas Day	December 25, 2023
WRWA Annual Conference (La Crosse)	March 26 - 29, 2024

WRWA Office Hours:

Monday – Thursday 7:00am – 4:00 pm
Friday 7:00am – 11:00am

Follow our Facebook page
or check our website for future
calendar events and updates.

For more information:

www.wrwa.org

Leave Your Water System To The Experts

• WELLS

- Design & Drilling
- Reconstruction
- Development
- Treatment
- Televising

100%
Satisfaction
Guaranteed

• PUMPS

- Turbine & Submersible

• CHEMICAL FEED SYSTEMS

• VFD'S & CONTROLS

• PERIPHERAL EQUIPMENT

CTW Corporation
Wells • Pumps • Controls

21500 W. Good Hope Road • Lannon, WI 53046

Phone: 262-253-6613

Also locations in Eau Claire, LaCrosse, Baraboo & Green Bay

www.ctwcorporation.com



*I need an easy and
convenient way to
earn my CEHs...*

EARN CEHS ONLINE!
ANYTIME, ANYWHERE
Convenient and Economical



GET STARTED TODAY AT

SunCoastLearning.com

or call 800-269-1181



Advertisers Index

Adaptor, Inc.....	9, 43	Kunkel Engineering Group.....	2, 47
Advanced Safety Technology, Inc.....	46	Lane Tank Company.....	15
AECOM.....	47	L & S Electric.....	51
American Flow Control.....	11	LRE Water.....	50
American Leak Detection.....	48	LW Allen, Inc.....	13, 26
American Structures, Inc.....	47	Macqueen Equipment.....	9
Ayres Associates.....	7	Martelle Water Treatment, Inc.....	15
Automatic Systems Co.....	48	McMahon.....	12, 46
Badger Labs.....	5, 50	Mead & Hunt, Inc.....	44, 47
Badger Meter.....	46	Midwest Meter, Inc.....	15
Becher-Hoppe Associates, Inc.....	48	Monroe Truck Equipment.....	IFC
B & M Technical Service.....	7, 44	MSA Professional Services.....	3, 7
Cady Aquastore.....	38	Mueller Co.....	49
CBS Squared Inc.....	17	Mulcahy Shaw Water.....	48
Cedar Corporation.....	13	Municipal Well & Pump.....	11, 37
Central Tank Coatings, Inc.....	9	Northern Lake Service, Inc.....	7
Clark Dietz.....	11, 46	Pittsburg Tank & Tower Maintenance Co., Inc.....	17
Coating Resources, Inc.....	50	P.J. Kortens & Company.....	47
Commercial Testing Laboratory.....	15	Process Equipment Repair Services.....	48
Core & Main.....	13	res.....	19
Crane Engineering Sales, Inc.....	33	R.N.O.W.....	17
Cretex Specialty Products.....	49	Robert E. Lee & Associates, Inc.....	46
CTW Corporation.....	17, 52	Ruekert & Mielke, Inc.....	46
Davy Engineering.....	9, 45	Sabel Mechanical.....	43
Delta 3 Engineering, Inc.....	47	Sealing Systems Inc.....	31, 49
Dixon Engineering, Inc.....	45, 46	Sensus.....	51
Donohue.....	51	Serwe Implement, LLC.....	49
Dorner.....	48	Shannon & Wilson.....	50
Drydon Equipment.....	48	Short Elliott Hendrickson.....	17
Energenecs.....	11	Staab Construction Corporation.....	49
ETNA.....	19	Starnet Technologies.....	49
Faith Leak Detection Services.....	11	Suburban Laboratories.....	50
Ferguson Waterworks.....	13	SunCoast Learning Systems.....	52
First Supply.....	48	Symbiont.....	48
Focus on Energy.....	49	Team Laboratories.....	48
Ford Meter Box Company.....	49	The Expeditors, Inc.....	50
Furey Filter and Pump.....	51	Town and Country Engineering, Inc.....	47
General Engineering Company.....	50	USA Bluebook.....	46, BC
Graef.....	46	Utility Logic.....	50
Hawkins.....	IFC	Van RITE Plumbing, Inc.....	51
Hydro Corp Inc.....	47	Vermeer.....	50
Infrastructure DL.....	51	Vierbicher.....	47
Integra-Vita-D-Chlor.....	13	Visu-Sewer.....	46
Integrated Process Solutions.....	49	Water Conservation Service, Inc.....	45
James Orr Coating Inspection.....	19	Water Surplus.....	49
JWR.....	19	Water Well Solutions.....	11, 25
KLM Engineering, Inc.....	9	William Reid, LTD.....	47

The Sourcebook for **Water & Wastewater Systems**

The **NEW USABlueBook 2023 Catalog** features thousands of products from the brands you trust, backed by our commitment to delivering the **Best Treatment**.

- Free Expert Technical Support
- Dedicated Account Managers
- 100% Satisfaction Guarantee

27
PRODUCT
CATEGORIES

1776
PAGES



Request your FREE catalog today!

Contact your USABlueBook account manager,
scan the QR code or visit usabluebook.com/C133.