



# Quality On Tap!

April 2023 | Volume 18, Issue 4

## THE STATE OF OUR WATERS

## THE FIVE PRINCIPALS OF SOIL HEALTH

## SAVE WATER IN THE YARD THIS SUMMER

## A MESSAGE FROM THE PRESIDENT OF THE BOARD

Ron Gillen, President  
South Dakota Association of Rural Water Systems



# RURAL WATER EXPO 2023

South Dakota Rural Water is pleased to host the 2023 Rural Water EXPO April 26-27. The EXPO will be held in Rapid City at the Best Western Ramkota Hotel & Convention Center.

The EXPO is open to all water and wastewater utility staff, board/council members, engineers, State and Federal employees. The training will consist of twenty presentations, 30 minutes each, thus allocating ten contact hours for those individuals who are licensed operations specialists. Along with the training sessions, the EXPO will showcase many of our industry's manufacturer and supplier leaders. These professional companies will be set up in the main EXPO training center for attendee easy access and to provide answers to those pressing questions. Many will be displaying the recent advances in technology our industry has witnessed over the past several years.

This year's EXPO will kick off at 8:00 am Wednesday and conclude at noon on Thursday, with lunch provided on the first day. Registration is \$100, and SDARWS is able to bill for this fee after the conference. Please pre-register by visiting our website at: [sdarws.com/EXPO](http://sdarws.com/EXPO). More information can be found on page 4.

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**SOUTH DAKOTA RURAL WATER WARRIORS**  
**FISHING TOURNAMENT**

**\$150.00 TEAM REGISTRATION**  
3-PERSON TEAM BOAT-ONLY TOURNAMENT  
MEAL PROVIDED FOLLOWING THE TOURNAMENT  
**\$1,000 PAYOUT FOR 1<sup>ST</sup> PLACE!**

**APRIL 28-29, 2023**  
**OUTPOST LODGE ON COW CREEK BAY**

For more information, contact Mike Moeller, SDARWS Tournament Chair  
605-270-4989 • [mmoeller@sdarws.com](mailto:mmoeller@sdarws.com)  
**Register online at [sdarws.com/fishing](http://sdarws.com/fishing)**





## FROM THE EXECUTIVE DIRECTOR

Kurt Pfeifle, Executive Director  
South Dakota Association of Rural Water Systems

# WATER 2040

I predict you will hear much more about the Water 2040 tagline (above) in the coming weeks, months, and years. What is Water 2040? Simply put, this is an effort to promote and protect the water resources of South Dakota. There is a particular emphasis on the Missouri River, arguably the most incredible water resource South Dakota has access to.

The increasing trend of potable water demands in South Dakota, coupled with a public desire for better water quality and mounting regulatory burdens placed on water purveyors, portray and foretell a desperate and thirsty future for residents across South Dakota.

Action is needed to strengthen our water utilities and build resiliency to these growing challenges. Enter Water 2040.

Water 2040 proposes to work with local, state, and federal agencies along with a host of other apparent stakeholders to clearly define what is needed and what the direction of state water policy should look like. This can be accomplished through regional needs assessments and feasibility studies to more accurately assess the state's current and future water needs and evaluate the capacity of local water resources to meet such requirements.

Water 2040 is also proposed as a conduit, a nexus if you will, to some of the large-scale water development projects currently underway in South Dakota; projects such as the Western Dakota Regional Water System, the Water Investment in Northern South Dakota (WINS) project, and the newly created Dakota MainStem System. It is not the

intent of Water 2040 to exercise any control over these efforts but rather to serve as a pipeline (pardon the pun) for communications with federal, state, and local authorities and to and between the projects themselves.

Whiskey is for drinking, and water is for fighting, is a lesson learned by South Dakota years ago, and Water 2040 aims to avoid the water fight pitfalls for the future.

There have literally been books written on the subject of South Dakota water wars (Cadillac Desert, Up Hill Against Water, and River of Promise to name a few). Nothing will kill a project faster than having dissent

among those involved. It doesn't take much for a federal or state appropriator not to fund something. Water 2040 intends not to let this happen. They will strive to keep the water community focused and cohesive in its mission and be fair and caring in its actions. Disagreement or dissent will be handled internally and not spill out in a public arena, which would only serve to harm the credibility of a project. A big job for sure, all of the adages of "herding cats" and "putting frogs in wheelbarrows" comes to mind. However, if anyone is up to the task, it is this diverse group of water professionals who have graciously volunteered their time, talents, and treasure to the Water 2040 efforts.

Keep your ears open and your eyes peeled for Water 2040. There is little doubt that you'll be hearing much more from this group as we move forward.



RURAL WATER  
**EXPO**  
2023

**APRIL 26-27, 2023**

**BEST WESTERN RAMKOTA  
HOTEL & CONFERENCE CENTER  
RAPID CITY, SOUTH DAKOTA**



*Contact Hours • Door Prizes • Lunch provided on Day One*

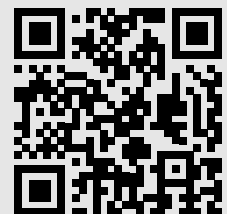
***This 1½ day event includes presentations  
and features exhibit displays***

*The EXPO is open to all water and wastewater utility staff, board/council members, engineers, State and Federal employees. The training will consist of twenty presentations, 30 minutes each, thus allocating ten contact hours for those individuals who are licensed operations specialists. Along with the training sessions, the EXPO will showcase many of our industry's manufacturer and supplier leaders. These professional companies will be set up in the main EXPO training center for attendee easy access and to provide answers to those pressing questions. Many will be displaying the recent advances in technology our industry has witnessed over the past several years.*

**ATTENDEE REGISTRATION**  
**\$100 – In-Person Registration**  
*Includes 10 contact hours  
and lunch on Day 1*

**ROOM BLOCK**  
Best Western Ramkota Hotel  
2111 N Lacrosse Street  
Rapid City, SD 57701  
605-343-8550

**AGENDA COMING SOON!**  
For more information visit  
[sdarws.com/EXPO](http://sdarws.com/EXPO)



**REGISTER ONLINE: [sdarws.com/EXPO](http://sdarws.com/EXPO)**



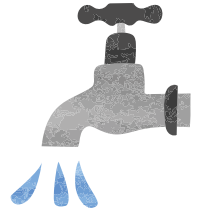
# SAVE WATER IN THE YARD THIS SUMMER

AS TEMPERATURES RISE IN THE SUMMER, SO DOES OUR OUTDOOR WATER USE  
— MOSTLY ON LAWNS AND LANDSCAPES

**29 BILLION GALLONS** of household water is used daily across the U.S.



Depending on the region, homeowners use **30-60%** of their water outdoors



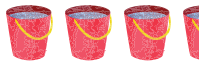
**9 BILLION GALLONS**

come from daily residential outdoor water use, mainly for landscape irrigation

**60%** of that is wasted, in part, due to overwatering.

The average family's water use is

**320 GALLONS PER DAY**

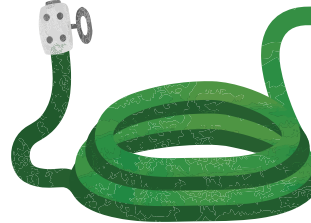


During the summer, it can be up to

**1,000 GALLONS PER DAY**



Some even use up to **3,000 GALLONS PER DAY**



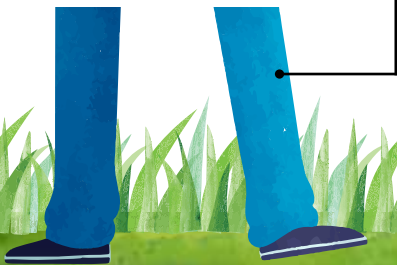
... equal to leaving a garden hose running for nearly **8 HOURS!**



## SIMPLE THINGS WE CAN ALL DO

### STEP ON IT:

Step on the lawn: If the grass springs back, it doesn't need water.

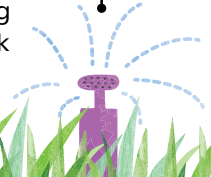


*Timing is everything. Plan to water in the early morning or evening to beat daytime evaporation*

### TAKE A SPRINKLER BREAK:

Grass isn't really meant to be bright green in the summer.

Make sure you're watering the lawn, not the sidewalk or driveway!



**LEAVE IT LONG:** Longer grass promotes a more drought-resistant lawn, reduced evaporation, and fewer weeds.

**TUNE UP YOUR SPRINKLER SYSTEM:** Inspect irrigation systems, and fix leaks and broken or clogged sprinkler heads. Just one broken sprinkler head could waste up to 25,000 gallons of water over a 6-month irrigation season



WaterSense, a partnership program by the U.S. Environmental Protection Agency, seeks to protect the future of our nation's water supply. For more tips on reducing outdoor water use, visit [epa.gov/watersense/outdoor](http://epa.gov/watersense/outdoor).



A pair of hands is shown from the front, cupping a mound of dark, rich, moist soil. The soil is piled high, overflowing slightly from the palms. The background is a solid, dark color, making the soil and hands stand out. The lighting is soft, highlighting the texture of the soil and the skin of the hands.

# The Five Principles Of Soil Health





**Soil Cover:** *Keep plant residues on the soil surface.*

Look down, what percentage of your soil is protected by residue? Erosion needs to be minimized before you can start building soil health.



**Limited Disturbance:** *Minimize tillage as much as possible.*

You will start building soil aggregates, pore spaces, soil biology, and organic matter.



**Living Roots:** *Keep plants growing throughout the year to feed the soil.*

Cover crops can add carbon to the soil, provide a great food source for micro-organisms. Start small to find the best fit for your operation.



**Diversity:** *Diversify as much as possible with 3 or more crops and cover crops whenever possible.*

Try to mimic nature by including cool and warm season grasses and broad leaf plants. Three or more crops in rotation benefits the soil food web, improves infiltration, nutrient cycling, reduces disease and pests, and aids in weed suppression.



**Integrating Livestock:**

Fall/winter grazing of cover crops increases livestock's plane of nutrition at a time when pasture forage quality can be low, increases the soil biological activity on the cropland, and improves nutrient cycling. Proper grassland management improves soil health.

## Soil Health Benefits

Builds organic matter which retains and cycles nitrogen and sequesters carbon; which in turn reduces fertilizer and fuel costs.

Stabilizes soil aggregates which improves resistance to erosion by wind and water.

Improves water infiltration and retention which helps to better manage the effects of flood or drought and improves trafficability on cropland fields.

Enhances wildlife habitat and balances the biological community above and below ground.

Healthy soils filter and clean water that moves through it, for improved water quality.



# THE STATE OF OUR WATERS

**Jay Gilbertson, East Dakota Water Development District**

Every year, the people of South Dakota, along with thousands of visitors, make use of the many and varied water resources of the state. Rivers and lakes are tapped by public water suppliers and private citizens for drinking water; irrigation provides water to crops and lawns to augment natural precipitation; anglers scour our lakes and streams in search of fish; and young and old enjoy a quick dip to escape the heat of summer. All of these activities are things we take for granted, but how do we know that the water on which we depend is really up to the task?

The South Dakota Department of Agriculture and Natural Resources (DANR), in cooperation with the United States Environmental Protection Agency (EPA), has identified a number of general classes of activities, known as beneficial uses, for the waters of the state. These are:

1. Domestic water supply;
2. Coldwater permanent fish life propagation;
3. Coldwater marginal fish life propagation;
4. Warmwater permanent fish life propagation;
5. Warmwater semipermanent fish life propagation;
6. Warmwater marginal fish life propagation;
7. Immersion recreation (swimming);
8. Limited contact recreation (boating and fishing);
9. Fish and wildlife propagation, recreation, and stock watering;
10. Irrigation; and
11. Commerce and industry.

All rivers and streams in South Dakota are assigned the beneficial uses (9) and (10) unless otherwise stated in the Administrative Rules of South Dakota (ARSD) Chapter 74:51:03. Lakes listed in ARSD Chapter 74:51:02 are assigned the beneficial uses of (7), (8) and (9) unless otherwise specified. These water bodies may also be assigned additional beneficial uses depending on local conditions.

For each beneficial use, DANR and EPA have established measurable standards (numeric criteria) to determine if the use can be safely met. For example, if the intended use is Immersion Recreation (swimming), bacteria counts in the water must be below a certain level and dissolved oxygen must be over a particular level. If the water body is to be used as a domestic water supply, concentrations of nitrate, sulfate, total dissolved solids, and other constituents cannot exceed specific levels. Temperature and suspended solids are the primary criteria used to evaluate suitability for the fisheries classifications, (2) through (6).

If 90% or more of the analyses from a particular water body meet the numeric criteria, then the resource is considered fully supporting of the designated use. It should be noted that a “fully supporting” designation does not necessarily mean that there were no problems found. It just means that if they were, they were few and far between, and not considered a serious risk to human health and safety. However, if violations of the numeric criteria are frequent (>10%), then the water body is considered impaired, and not supporting one or more of its intended uses.

Every two years, DANR assembles water quality information on the rivers, lakes and streams of the state. The purpose of this report is to assess the water quality of South Dakota’s water resources and to identify the impaired water bodies. This report meets the requirements of Sections 305(b), 303(d), and 314 of the federal Clean Water Act, which mandate a biennial report on state water quality be submitted to Congress. This report is also intended to inform the citizens of South Dakota on the status of the quality of their water resources. Finally, it serves as the basis for management decisions by natural resource agencies and interested stakeholders to plan and prioritize water pollution control activities. The report is published in even-numbered years. The most recent (2022) South Dakota Integrated Report for Surface Water Quality Assessment is available on the DANR website: [danr.sd.gov/OfficeOfWater/SurfaceWaterQuality/docs/DANR\\_2022\\_IR\\_approved.pdf](https://danr.sd.gov/OfficeOfWater/SurfaceWaterQuality/docs/DANR_2022_IR_approved.pdf)

The Integrated Report breaks the State into fourteen major watersheds. It shows the name and location (county) of each lake and river/stream segment for which information is available. Each specific beneficial use is listed, along with whether or not it is meeting the intended use. In some cases, most often for immersion and/or limited contact recreation, there is insufficient information on which to determine if the use is supported or not. If an impairment exists, the cause is given, and where possible, potential sources of the problem are listed.

In the 2022 Integrated Report, excessive amounts of bacteria (primarily from livestock) and total suspended solids (agricultural and natural sources) were the most common sources of impairments to recreational and fisheries/aquatic life uses respectively. Another significant impairment is mercury found in fish flesh, although as this is mostly attributed to atmospheric deposition from out-of-state sources, local corrective measures may be of limited effectiveness.

So, what happens when an impairment is found? Once a



water body is determined to be impaired, DANR is required to conduct a more thorough investigation to better identify the source(s) of the impairment(s). Although the State maintains a network of over 150 surface water monitoring locations on rivers and streams, and annually samples about 35 lakes, their efforts are designed to function largely as screening tools. Rarely does this system provide sufficient information so that a particular problem can be effectively identified and treated.

These detailed investigations result in the development of something called a total maximum daily load, or TMDL. A TMDL represents the amount of a particular contaminant that can enter a water body in a given day without the beneficial use being impaired. A comparison of the actual pollutant load and the TMDL can give a pretty good idea of the amount of effort needed to correct the problem(s). A TMDL report will include recommendations for what actions may be necessary to address the problem(s) and to reduce the pollutant loadings.

In most cases, non-point source (NPS) pollution sources are responsible for identified impairments. NPS pollution, as its name implies, results from the cumulative impact of many small activities across a watershed, as opposed to emanating from a single, readily identifiable location (point source). In South Dakota, where agriculture dominates the economy, it is no surprise that a significant amount of the NPS pollution is ag related. However, municipalities and commercial and residential areas can also be significant contributors, and in some instances, natural sources have caused impairments.

Once a TMDL report has been prepared, DANR works with interested local natural resource agencies and others to develop a project to address the problems. Referred to as watershed implementation projects, they utilize local, state and federal fiscal and technical resources to put into place voluntary changes to problematic land use practices. The changes, or best management practices (BMPs), are designed to allow the landowner to continue to use their property in a manner they desire, while also eliminating, or at least minimizing, adverse impacts on the public water bodies. In most cases, adoption of BMPs results in improved efficiency and productivity, as well as reducing pollution potential. However, in recognition of the very real public benefit derived from BMP implementation, projects provide cost-share assistance of up to seventy-five percent (75%) to willing landowners.

The BMPs that may be promoted by a particular project can vary depending on the type(s) of impairment(s) and likelihood of adoption. After all, the best solution is

no good unless someone is interested in putting it into practice. Examples of BMPs supported by watershed implementation projects around the state include: upgrading animal waste management systems, installing terraces and grassed waterways, irrigation system upgrades, river bank and shoreline stabilization, long-term or permanent easements along rivers and streams, and public awareness and education. Most projects also have a water quality monitoring component to measure impacts on impaired waters.

Unfortunately, there is rarely a single action, or small set of changes, that can alter the status of a water body. NPS pollution comes from many places over a large area, and so “fixing” such problems involves implementing many BMPs across the watershed. As a result, watershed restoration projects may need to put in place hundreds of BMPs to affect change. The problems they are seeking to correct developed over many years - fixing them can also be a long-term, and very expensive, commitment.

Efforts to address known water quality impairments are currently active in nearly every major watershed in South Dakota. The Big Sioux River Project has developed innovative riparian buffer activities that are having demonstrable impact on water quality in the most heavily used watershed in the state. The Belle Fourche River Partnership is working to improve irrigation efficiency, and a subsequent reduction in field runoff. The South Central Watershed Project provides guidance and assistance to landowners in the Vermillion and James River basins, along with the

watershed of Lewis & Clark Lake, spanning territory from Clearfield to Canova. These are just a few of the efforts underway.

Where do things go from here? DANR, the East Dakota Water Development District and other natural resource agencies continue to monitor the status of our water bodies. For the most part, the problems that have been identified, while real and requiring corrective efforts, do not represent significant threats to human health and safety, provided a little common sense is exercised. Drinking water impairments are rare, and with the ever increasing improvements in treatment technology, public water supplies are unlikely to be seriously harmed. (Provided we are prepared to pay treatment costs.)

What can you do? As noted above, most of the problems arise from NPS pollution. Every one of us can be, or is, a source, so each of us should look at what we might be doing and how to make things better. Never has the old adage, “An ounce of prevention is worth a pound of cure,” been more relevant.

**Efforts to address known water quality impairments are currently active in nearly every major watershed in South Dakota.**





The first documented and recorded minutes for the formation of the Bear Butte Valley Rural Water System (BBV) located east and north of the town of Sturgis were recorded on April 2, 2009. The organizational meeting was the culmination of several telephone calls from Neal Rowett, a rural area resident, to the South Dakota Rural Water Office located in Spearfish. “If I recall the first conversation, said George Vansco, “it went something like this: ‘Are you the guy who can help a bunch of rural area ranchers and homeowners start up a water system?’” The reason for his interest in starting a new system stemmed from a concern over poor water quality due to the local creek picking up undesirables as it weaved its way through the town of Sturgis. Bear Butte Creek has allowed some owners the benefit of drilling shallow wells near the creek while others were forced into deeper aquifers at a much higher cost.

With a desire to provide the area with quality drinking water; the next steps were getting local area residents involved and beginning to search for funds enabling them to conduct

a feasibility study. After attending several Meade County Commission meetings and bringing the idea of developing another west river water system to the Department of Environment and Natural Resources (DENR), the steering committee decided to incorporate as a non-profit.

Five days after the first documented meeting, Bear Butte Valley Water was incorporated on May 7, 2009. At this meeting the following board members were elected: Neal Rowett, President; Robert Yantis, Vice-President; Bruce Weyrich, Secretary/Treasurer; Clair Rowett, Director; Don Chord, Director; Jesse Whitford, Director. As the years have passed, some directors dropped off the board and others were newly elected – but the majority of the board has remained the same.

While it takes most water systems about 30 years from inception to completion, Bear Butte Valley Water has been on the fast track. After receiving their certificate of incorporation on May 7, 2009, they received funding from





the state just a year later. Incorporating allowed them to get an initial \$7,500 in planning funds, which they used to pay DGR Engineering to draw up plans for the system. Total project costs in 2010 were estimated at \$5.1 million.

In April of 2010, BBV was given the go-ahead from USDA Rural Development to apply for loans after an archaeological study was conducted. A \$500,000 grant was received from the State of South Dakota through the Consolidated Water Facilities Construction Program to begin the project. The initial cost for those interested in hooking up to the system was \$1,500/connection. Meetings continued to be held to determine where the best source of water would come from. Proposals came in from cities, individual landowners, campgrounds and others, while drilling a well for the system was also looked at as an option.

USDA Rural Development awarded Bear Butte Valley Water, Inc. with a water and environmental loan in the amount of \$2,917,000, and a grant of \$2,000,000 in January of 2014. The State of South Dakota also kicked in additional funding through a \$1,500,000 grant, an additional \$500,000 was acquired from DENR, and USDA Natural Resources Conservation Service provided significant funding through its EQIP program to provide water for livestock. Through this funding, construction was planned to expand the system to 150 miles of distribution pipeline, with water available to 220 users and 150 service locations upon completion.

A ground breaking ceremony was held on June 24, 2015 to commemorate the awarding of bids to complete the entire rural water system – including installing 110 miles of pipeline, storage reservoirs, and pumping stations. Bruce Jones – USDA Rural Development Acting State Director, and Jacqueline M. Ponti-Lazaruk – USDA Rural Development Assistant Administrator for the Water and Environmental Program in Washington, DC, were on hand at the ground breaking to announce additional funding of a \$200,000 loan coupled with a \$2,527,000 grant to complete the system. Representatives from the Congressional offices, the South Dakota Association of Rural Water Systems, Meade County Commissioners, the engineer, and Sturgis Economic Development were also on site for the ground breaking activities.

Said Neal Rowett, Board President of BBV Water, Inc. “This accomplishment is the result of many days, weeks, and years of service and perseverance by a dedicated board of directors, along with the help of professional guidance received from our engineering partners and South Dakota Rural Water. We appreciate the support of the community for the confidence these people have shown in our efforts. Bear Butte Valley Water is a community owned, non-profit corporation that will serve its members for many future generations. It is with great pride that we will be providing drinking water of excellent quality with enough volume and pressure to fulfill the needs of our members.”

The most recent construction project included 252 services, 146 miles of pipe at a cost of \$11.4 million. The project was funded in part with a \$3.1 Million WEP loan and \$4.5 Million grant. The South Dakota Department of Environment and Natural Resources provided \$2,000,000 grant under the Water Facilities Construction Program. Additionally, 28 livestock producers in the area have joined together with the Natural Resources Conservation Service to secure Environmental Quality Incentives Program (EQIP) funding for using rural water service to improve the environmental quality of their livestock operation. The available funding to the water system

## BOARD MEMBERS:

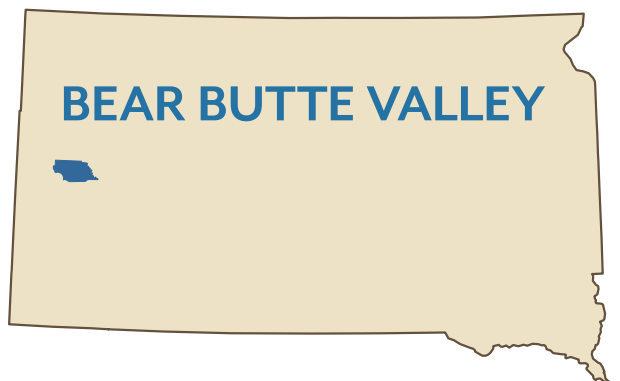
- Bruce Weyrich – President
- Ed Blair – Vice-President
- Bob Kaufman – Secretary/Treasurer
- Clair Rowett – Director
- Randy Hallock – Director
- Rich Grosch – Director
- Brook Looby – Director

## STAFF:

- Dennis Kinslow – Manager

## SYSTEM AT A GLANCE

- Service Connections: 275
- Water Source: wells
- Counties Served: Meade



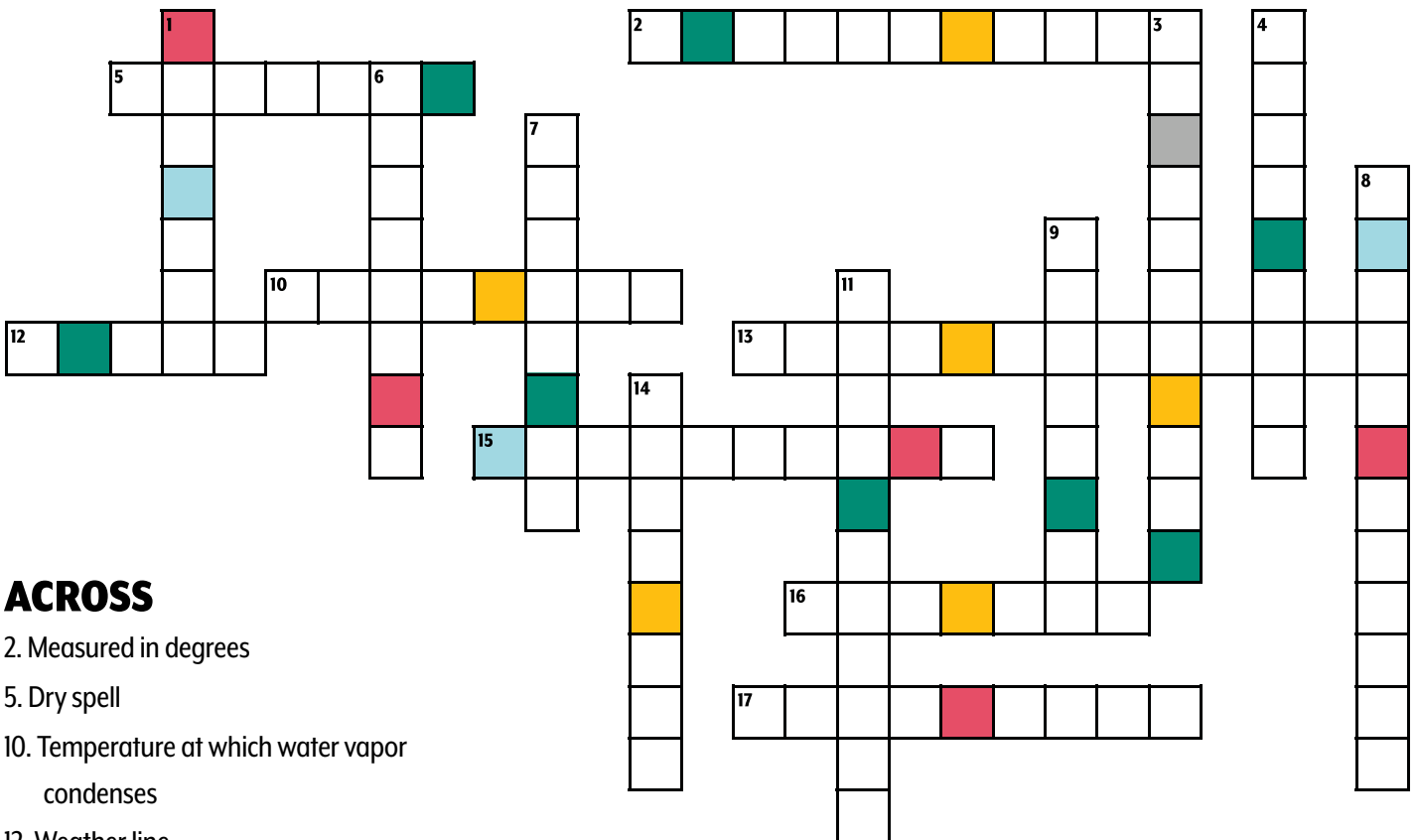
through the EQIP program is approximately \$1.1 Million. The remaining funding came from local sources and the customers of BBVW. The well was completed in 2014, the tanks and pump stations in early 2016 and the pipeline was complete at the end of 2016. BBVW is now providing rural water service to their 309 members with an additional 30 in the works. These new customers will be included in a new 25-mile line of pipe in the Alkali road project, which is funded by Rural Development. A standby well and new booster station and storage tank are also planned. We have let bids for the well at \$1,335,000 and the line extension at \$3,076,815. The tank and booster will follow soon.

# RURAL WATER CROSSWORD & WORD SCRAMBLE CONTEST

## CLIMATE



### SCRAMBLE ANSWER



### ACROSS

- 2. Measured in degrees
- 5. Dry spell
- 10. Temperature at which water vapor condenses
- 12. Weather line
- 13. Rain, snow, sleet, or hail
- 15. The air in any particular place
- 16. Violent rotating windstorm
- 17 Environmentalists concern

### DOWN

- 1. Process of wearing away
- 3. Process of turning liquid into vapor
- 4. Freezing weather factor
- 6. Long hot spell
- 7. Air Dampness
- 8. Loud weather event
- 9. White storm
- 11. Study of Weather
- 14. Prediction

**RULES:** Use the colored squares in the puzzle to solve the word scramble above. Call your Rural Water System (See page 2 for contact information) or **enter online at [www.sdarws.com/crossword.html](http://www.sdarws.com/crossword.html)** with the correct phrase by April 15, 2023 to be entered into the \$100 drawing. Only one entry allowed per address/household. You must be a member of a participating rural water system to be eligible for the prize. Your information will only be used to notify the winner, and will not be shared or sold.

Congratulations to Randy Stanley with the BDM Rural Water System who had the correct phrase of "The secret ingredient is love" for January 2023.

# IT'S TIME TO TALK PFAS

Kevin Christenson – Source Water Protection Specialist,  
South Dakota Association of Rural Water Systems

Almost everywhere you go, especially in the water industry, people cringe and cuss when you mention the word PFAS. At the same time, talking with people at ball games, the grocery store, and various other businesses in their communities, I've found that people outside the water industry know just bits and pieces about PFAS. Hopefully, I can help with some of the "bits and pieces."

## What is PFAS?

Per and Polyfluoroalkyl Substances, also known as PFAS, are a large, complex group of manufactured chemicals that are ingredients in various everyday products. For example, they keep food from sticking to packaging or cookware, make clothes and carpets resistant to stains, and create more effective firefighting foam. PFAS are also used in the aerospace, automotive, construction, and electronics industries.

PFAS molecules have a chain of linked carbon and fluorine atoms. Because the carbon-fluorine bond is one of the strongest, these chemicals do not degrade quickly or easily in the environment, so they are often labeled the "Forever Chemical."

## Why be concerned about PFAS?

Multiple health effects associated with PFAS exposure have been identified and are supported by different scientific studies. Concerns about the public health impact of PFAS have arisen for the following reasons:

- Widespread occurrence. Studies find PFAS in the blood and urine of people, and scientists want to know if they cause health problems.
- Numerous exposures. PFAS are used in hundreds of products globally, with many opportunities for human exposure.
- Persistent. PFAS remain in the environment for an unknown amount of time.
- Bioaccumulation. People may encounter different PFAS chemicals in various ways. Over time, people may take in

more chemicals than they excrete, which leads to body bioaccumulation.

Because there are many PFAS chemicals, which often occur in complex mixtures and various everyday products, researchers face challenges in studying them.

More research is needed to understand all exposure sources fully and if and how they may cause health problems.

The research reveals possible links between human exposure to PFAS and adverse health outcomes. These health effects include altered metabolism, fertility, reduced fetal growth and increased risk of being overweight or obese, increased risk of some cancers, and reduced ability of the immune system to fight infections.

The Safe Drinking Water Act (SDWA) requires that once every five years EPA issue a list of unregulated contaminants to be monitored by public water systems. Unregulated Contaminant Monitoring Rule (UCMR5) requires sample collection for 30 chemical contaminants between 2023 and 2025 using analytical methods developed by EPA and consensus organizations.

This action provides EPA and other interested parties with scientifically valid data on the national occurrence of these contaminants in drinking water. UCMR 5 will provide new data that is critically needed to improve the EPA's understanding of the frequency that 29 PFAS (and lithium) are found in the nation's drinking water systems and at what levels. This data will ensure science-based decision-making and help prioritize the protection of disadvantaged communities.

Nationwide, all PWSs serving more than 10,000 people (i.e., large systems) will monitor; all PWSs serving 3,300 to 10,000 people and 800 representative PWSs serving fewer than 3,300 will monitor for PFAS, subject to availability of appropriations and sufficient laboratory capacity.

The South Dakota Association of Rural Water Systems has partnered with the South Dakota DANR. By doing so, SDARWS has taken a lead role and will be collecting the samples required by the UCMR5 in South Dakota, with the thought of keeping sampling protocols and procedures consistent and easing the sampling burden on communities and systems.



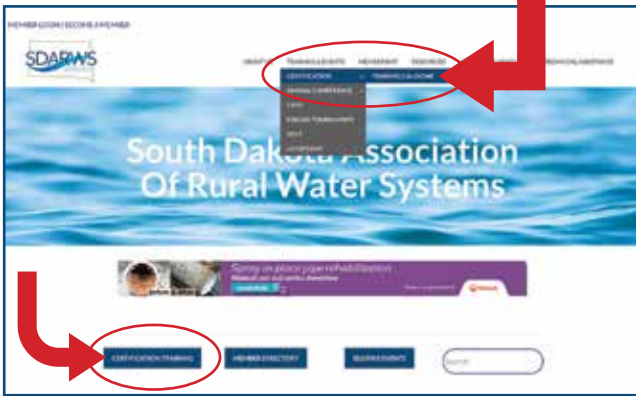


# REGISTER FOR SDARWS CERTIFICATION CLASSES

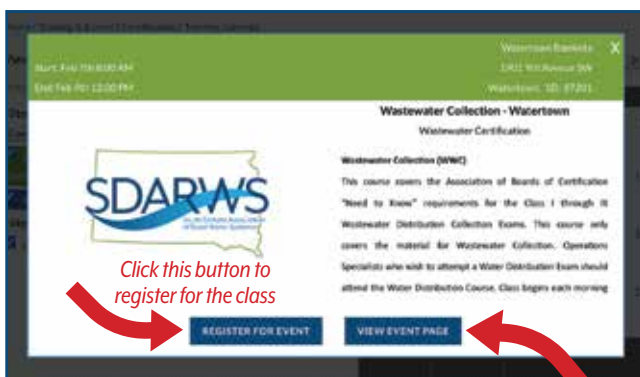
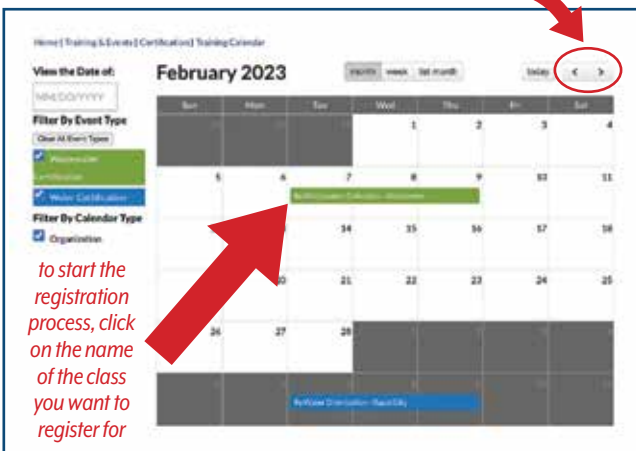
The South Dakota Association of Rural Water Systems has upgraded to a new website and class registration software. This move will allow us to better track class attendees and certification hours.

## 1. Navigate to **SDARWS.COM**

- Bring your cursor to the **TRAINING & EVENTS** header, and hover over **CERTIFICATION** and you'll see **TRAINING CALENDAR** pop up
- or click on the **CERTIFICATION TRAINING** button
- or navigate to **WEB.SDARWS.COM/EVENTS**

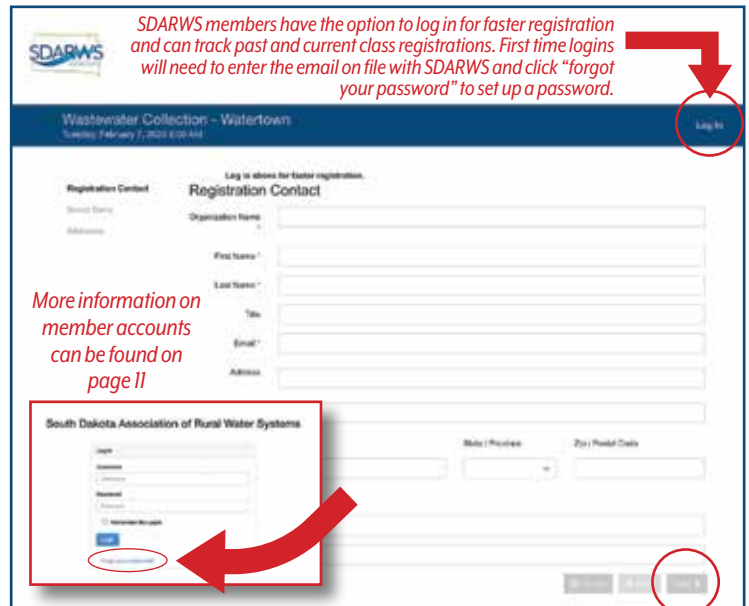


## 2. Browse for classes by clicking on the arrows to navigate the calendar

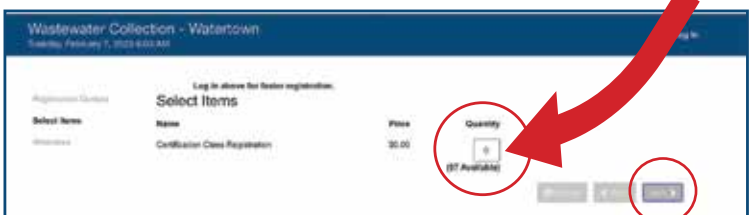


Click this button for more information on the class

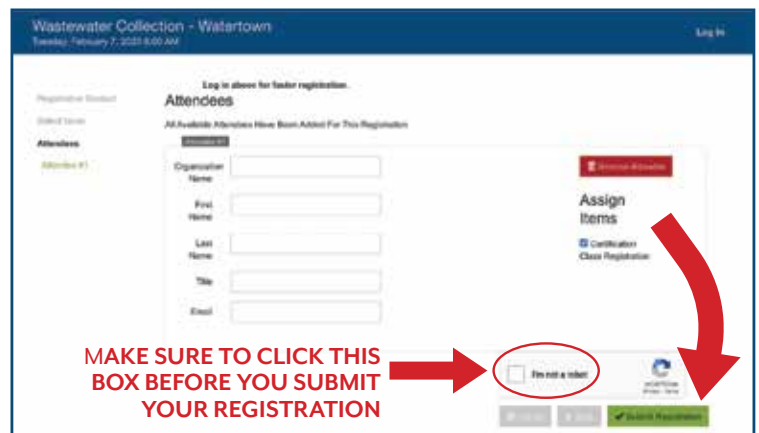
## 3. Fill out the form with the name and information of the person filling out the form, and click **NEXT**



## 4. In the quantity box, enter the number of people you are registering for this class, and then click **NEXT**



## 5. Fill out the information for each attendee. Make sure to click the **I AM NOT A ROBOT** button, and then click the green **SUBMIT REGISTRATION** button. An email confirmation with registration details will be sent to each email address provided during the registration process.





# OPERATOR CERTIFICATION TRAINING AND EXAMS

Register for training classes online at: [web.sdarws.com/events](http://web.sdarws.com/events)

Basic Water Treatment	March 21-23, 2023	Watertown Ramkota, Cattail Room
Certification Exam	March 23 @1:00 PM	Watertown Ramkota
Basic Wastewater Treatment	April 4-6, 2023	Sioux Falls Ramkota, Harvest Room
Certification Exam	April 6 @1:00 PM	Sioux Falls Ramkota
Small Water Treatment Workshop	April 25, 2023	Rapid City Ramkota
Intermediate Water Treatment	May 2-4, 2023	Aberdeen Ramkota
Certification Exam	May 4 @1:00 PM	Aberdeen Ramkota
Advanced Water Treatment	May 23-25, 2023	Rapid City Ramkota, Rushmore Room
Certification Exam	May 25 @1:00 PM	Rapid City Ramkota
Wastewater Collection	July 25-27, 2023	Aberdeen Ramkota, Northern Room
Water Distribution	July 11-13, 2023	Watertown Ramkota, Cattail Room
Wastewater Collection	July 25-27, 2023	Aberdeen Ramkota, Northern Room
Basic Water Treatment	August 8-10, 2023	Sioux Falls Ramkota, Harvest Room
Intermediate Water Treatment	August 29-31, 2023	Spearfish Holiday Inn
Small Water Treatment Workshop	September 19, 2023	Online Via Zoom
Stabilization Pond Workshop	October 12, 2023	Huron Events Center
Stabilization Pond Workshop	October 17, 2023	Mitchell Highland Conference Center
Wastewater Collection	October 24-26, 2023	Rapid City Ramkota, Rushmore Room
Basic Wastewater Treatment	November 14-16, 2023	Spearfish Holiday Inn
Water Distribution	December 5-7, 2023	Rapid City Ramkota, Rushmore Room

## EXAM INFORMATION

All exams cost \$60.00 and must be taken “in-person.”

Any exam can be taken at an exam session. You can take more than one exam at an exam session; however, the exam session remains at three hours long.

All exam applications are due no later than two weeks prior to the exam date to DANR. Questions regarding exams can be directed to Tammie Hill with DANR at 605-773-3577.

### DANR Operator Certification website:

[danr.sd.gov/OfficeOfWater/OperatorCert/default.aspx](http://danr.sd.gov/OfficeOfWater/OperatorCert/default.aspx)

*The Stabilization Pond class deals strictly with ponds/lagoons and is the best class for preparing to take the Small WW Exam. The Basic WW Treatment class deals with all types of wastewater treatment other than ponds/lagoons and is the best class for preparing to take the Class I WW Treatment exam. Small Systems that use ponds/lagoons for treatment can come into compliance with the Operator Certification Law by passing either the Small*

*WW System exam or the Class I WW Treatment Exam.*

*Water systems serving less than 500 individuals and use wells as its source can come into compliance by passing the Small Water Treatment exam. Larger systems must pass the Class I Water Treatment exam or higher depending on the facility classification.*

## STUDY MATERIALS

DANR has water exam study material to lend to operators. These include manuals from California State:

- *Water Distribution System Operation and Maintenance*
- *Small Water System Operation and Maintenance*

## TRAINING CLASSES

Certification Training Classes are conducted by the South Dakota Association of Rural Water Systems. **These classes are presented at no charge.** Certified Operators can obtain contact hours for attending all of the above classes.

For more information on certification training classes, please contact Bill Thorson at 605-556-7219 (office) or 605-201-0170 (cell).





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# WATER MATTERS

## Aquatic Invasive Species - Zebra Mussels Part I

Although South Dakota lacks the '10,000 lakes' our neighbor to the east likes to talk about, the rivers, lakes and streams that we do have are important and treasured water resources. Given the relative scarcity, it might be argued that we should put more effort into the protection of what few water bodies we do have.

Aquatic Invasive Species (AIS) - As the name implies, the plants and animals that make up AIS in South Dakota are not native to the area. Consequently, they often lack natural predators or other controls on their growth and distribution. Under the right conditions, they can quickly take over a water body by out competing native species. Because they are not native, AIS need to be introduced to new territories. Sometimes this is done intentionally, but most often the introduction is the unintended consequence of some other action.

Zebra mussels, a fingernail-sized mollusk that is native to fresh waters in Eurasia, is an example of an AIS that is drawing a lot of attention in South Dakota. They probably arrived in the Great Lakes in the 1980s via ballast water that was discharged by large ships from Europe, and have spread rapidly throughout the Great Lakes region. From there, they spread into the large rivers of the Mississippi River drainage, including the Missouri River. Currently (March 1, 2023), zebra mussels are found in over a dozen water bodies in South Dakota.

Aquatic invasive species can cause recreational, economic, and ecological damage, potentially changing how residents and visitors use and enjoy South Dakota waters.

### Zebra mussel impacts:

- Encrust equipment, such as boat motors and hulls, which reduces performance and efficiency and is costly to clean and repair.
- Swimmers and pets can cut their feet on zebra mussels attached to rocks, docks, swim rafts and ladders.



- Create a costly problem for power plants, cities and residents when they clog water intakes.
- Filter tiny food particles out of the water, which can reduce available food for larval fish and other animals, and can increase aquatic plant growth as a result of increased water clarity.
- Attach to and kill native mussels.

To provide information about AIS in South Dakota, the South Dakota Department of Game, Fish & Parks has established a website: <https://sdleastwanted.sd.gov/>.

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