Aurora-Brule Rural Water System

Quality On Tap!

April 2025 | Volume 20, Issue 2

GROWING CONCERN OVER PFAS AND LITHIUM IN SD'S WATER

HOW YOUR WATER SOURCE AFFECTS QUALITY & CHEMISTRY

BACKYARD POLLINATOR GARDENS

IN THIS ISSUE:

FROM THE MANAGER

Wade Blasius
Manager, Aurora-Brule Rural Water System

Welcome to another edition of Quality on Tap!

As I write this column in early February, it's been an unusually dry winter. With virtually no snow cover to insulate meter pits, we've had more freeze-ups than normal.

Missouri River levels have remained consistent throughout this past year, mostly due to adequate Spring and Summer rains. Mountain snowpack water content above Ft Peck was showing 86% of normal as of Feb 4, 2025. The normal peak generally occurs near April 15th.

A-B Rural Water received grant funds from USDA Rural Development to complete some repairs on the raw water pipeline between the river intake station and the water treatment plant. Earth movement/landslides in the river hills have caused problems with this pipeline for many years. We're planning to go out for bids on this project this spring.

The water system has also secured funding to replace the standby generator and the automatic power transfer switch at the water treatment plant. The water plant generator not only provides back-up power during outages, but it also allows the system to reduce power costs by participating in the load shed program offered by our power suppliers. During periods of peak power consumption when rates are the highest, the power company will automatically bring our generator online which reduces our monthly demand charges.

The A-B Rural Water Board of Directors has contracted with our engineering firm, Banner Associates to prepare a 25-year Improvement Plan for the water system. This project includes creating an updated planning document to summarize system deficiencies, evaluate alternatives and recommend improvements to the water treatment plant as well as the entire water distribution and storage system.

The intent of this study is to assess the current condition and capacity of the A-B water supply and distribution system, development of a priority list of improvements to handle system growth, and cost estimates for each improvement.

Planning for future water needs is essential for continued growth and prosperity in our service area. When completed this planning document will provide direction for the Board and Staff going forward.

AB PLACES THIRD IN SD WATER TASTE TEST CONTEST

The Aurora-Brule Rural Water System (ABRWS) earned an impressive third-place finish in the South Dakota Rural Water Taste Test Contest, held in Pierre on January 15, 2025. Competing against 21 other high-quality water samples from across the state, ABRWS demonstrated its commitment to providing clean, great-tasting water to our customers. This recognition highlights our system's dedication to water quality and excellence in rural water service.

Please find the 2024 Annual Water Quality Report on pages 14 & 15.

Enjoy the Spring!

ABRWS
Aurora-Brule
RURAL WATER SYSTEM

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Tim Pringle - Distribution Operator

Rick Blasius - Distribution Operator

OFFICE HOURS

8:00 a.m. – noon
1:00 p.m. – 5:00 p.m.
Office is closed weekends and holidays

CONTACT INFORMATION

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P.O. Box 140
Kimball, SD 57355
Phone: (605) 778-6110
1-888-282-2497
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abrws@midstatesd.net

FOR EMERGENCIES

After Hours Call 605-778-6110
Leave a message. Messages are immediately transferred to cell phones.

South Dakota Association of Rural Water Systems Honors Joe Priebe as the 2024 Rural Water Operations Specialist of the Year

The South Dakota Association of Rural Water Systems is pleased to announce Joe Priebe with the Aurora-Brule Rural Water System as the recipient of the 2024 Rural Water Operations Specialist of the Year Award. This honor recognizes Joe's exceptional dedication, expertise, and commitment to ensuring safe and reliable water for his community.

As a key member of the Aurora-Brule Rural Water System team, Joe oversees the operation and maintenance of the system's 2 MGD surface water treatment plant and river intake system. His role goes beyond plant operations. He often works alongside the distribution team to perform critical system repairs, including operating heavy equipment like backhoes.

A licensed electrician, Joe is instrumental in managing the electrical and control systems within the treatment plant and at booster stations, ensuring smooth and efficient operations. His dedication to continuous learning through operator training reflects his commitment to delivering the highest quality drinking water to Aurora-Brule's members.

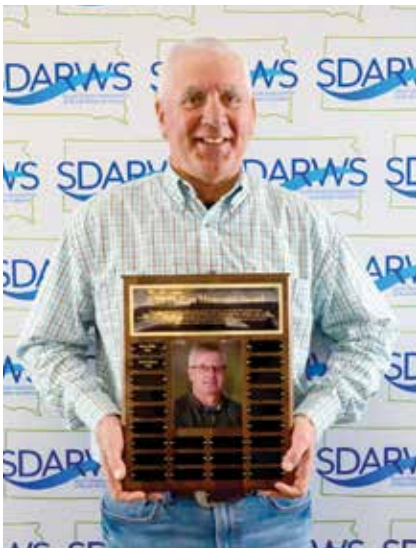
Joe's meticulous approach is evident in every aspect of his work – from the spotless condition of the treatment plant to the well-maintained equipment and meticulous records he keeps. Known for his positive attitude and tireless work ethic, Joe is the first to arrive at work each day, ready to tackle challenges and support his team.

Highly respected by his colleagues and valued by the community, Joe's contributions have had a lasting impact on the quality and reliability of the water system. His unwavering commitment to excellence sets a standard for the industry and highlights the importance of operations specialists in ensuring safe drinking water for South Dakotans.

The South Dakota Association of Rural Water Systems congratulates Joe Priebe on this well-earned recognition and thanks him for his invaluable service to the rural water industry.

South Dakota Association of Rural Water Systems Honors Wade Blasius with Russ Phillips Memorial Award

The South Dakota Association of Rural Water Systems proudly announces Wade Blasius, General Manager of Aurora-Brule Rural Water System, as the 2024 Russ Phillips Memorial Award recipient. This plaque, presented in honor of Russ Phillips, commemorates Russ's 24 years of dedicated service with the Tripp County Water Users District, standing as a testament to his expertise, dedication, and profound care for the sustainable management of water resources.



Russ Phillips, who served as a water operator starting in 1995 and later became the manager in 2006, left an indelible mark on the landscape of water stewardship. His passion, expertise, and tireless dedication significantly impacted access to clean, safe drinking water in the community. Despite his untimely passing in 2019, Russ's legacy lives on, inspiring generations to come.

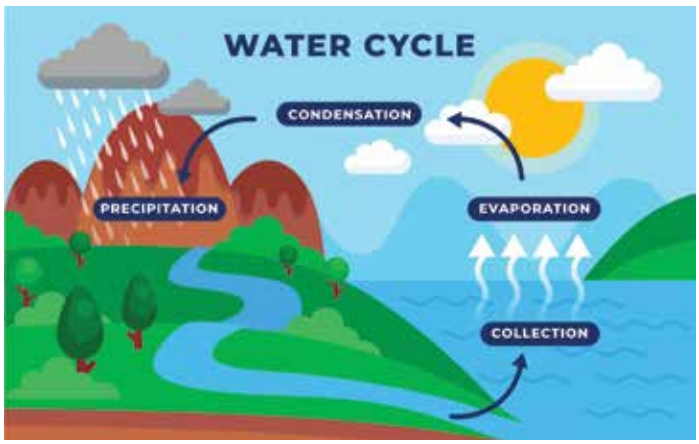
The Russ Phillips Memorial Award, presented in honor of this distinguished individual, recognizes those who are committed to sustainable water resource management and contribute significantly to water management. Russ's contributions continue to shape the work carried out by water professionals every day.

Wade Blasius's remarkable 45-year career with Aurora-Brule Rural Water System is a testament to his unwavering commitment to excellence in rural water management. Starting his career with the organization and rising to the role of General Manager, Wade has consistently demonstrated integrity, humility, and a passion for serving others.

Known for his keen ability to understand people and situations, Wade approaches every decision with fairness, respect, and collaboration. His leadership style has earned him the admiration of employees, directors, customers, and peers, creating a legacy of trust and mutual respect within the rural water community.

A forward-thinking leader, Wade ensures that Aurora-Brule Rural Water System stays ahead of emerging technologies and industry advancements. His proactive approach empowers the organization's directors to make informed decisions, driving progress and sustainability for the communities they serve.

MAKE YOUR OWN MINI WATER CYCLE!



Have you ever wondered how water moves around our planet? The water cycle is nature's way of moving water through the air, land, and back again. You can create your very own mini water cycle at home with just a few simple materials!

What You'll Need:

- A resealable plastic bag
- A permanent marker
- Water
- Blue food coloring (optional)
- Tape

Step-by-Step Instructions:

1. **DRAW THE WATER CYCLE** – Use a permanent marker to draw a sun, clouds, and waves (to represent water) on the outside of the plastic bag.
2. **ADD WATER** – Pour about ¼ cup of water into the bag. If you like, add a drop of blue food coloring to make it easier to see.
3. **SEAL AND TAPE** – Zip the bag shut tightly and tape it to a sunny window.
4. **WATCH AND LEARN!** – Over time, you'll see water droplets form on the inside of the bag. This is condensation! As the water heats up, it evaporates, then cools and forms droplets, just like in the real water cycle.

What's Happening?

EVAPORATION – The sun's warmth turns water into a gas called water vapor.

CONDENSATION – Water vapor cools and turns back into tiny liquid droplets (that's what you see inside the bag!).

PRECIPITATION – When the droplets get big enough, they fall as rain, just like in nature!

COLLECTION – The fallen rain gathers in bodies of water like lakes, rivers, and oceans, ready to start the cycle again.

Try this experiment and watch the water cycle happen right before your eyes. Science is amazing!

Did You Know? The water you drink today could be the same water a dinosaur drank millions of years ago! Thanks to the water cycle, water keeps moving through evaporation, condensation, and precipitation – never running out, just changing forms!

Q: What did the cloud say to the raindrop?
A: You're falling for me!

BACKYARD POLLINATOR GARDENS

There are many reasons why pollinators are important for our own health and why healthy soil and pollinators are connected. Pollinators help contribute to a diverse plant community which in-turn increases the health of your soil. Listed below are a few interesting facts about the need for pollinators.

- **More than 100 crops in North America need pollinators.**
- **One out of every three bites of food is dependent on pollinators.**
- **More than 75% of flowering plants depend on pollinators.**
- **More than $200 billion per year impact on the global economy.**

POLLINATORS

Bees are one of the most important pollinators in the world. There are over 4,000 species of bees in North America and hundreds of species in South Dakota. Over 90% of the bees are solitary, but some are communal or social bees like honey bees and some bumblebees. About 30% of solitary bees use locations like abandoned beetle tunnels in old logs for nesting and 70% nest in the ground. Butterflies are another important pollinator in South Dakota and habitat provided for either will benefit both and also benefit your garden.

GARDEN LOCATION AND MAINTENANCE

The best location for a pollinator garden has a mix of full and partial sun. Provide a place for butterflies to rest and bask in the sun. Butterflies need sun for orientation and to warm their wings for flight. Flat stones placed in a sunny part of the garden provide butterflies with an area to enjoy the sun. Butterflies often congregate on wet sand and mud to partake in "puddling," drinking water and extracting minerals from damp puddles. Place coarse sand in a shallow pan and then insert the pan in the soil of your habitat. Make sure to keep the sand moist. Provide an area of bare or nearly bare soil that is undisturbed for ground nesting bees. Mulching your garden is a good idea for moisture retention, weed suppression, and soil health, but many ground nesting bees require an area of well-drained bare ground. The area does not need to be large or exposed to the wind, a small area about 12 inches square will be sufficient.

Avoid areas with a strong history of noxious weeds and try to locate the garden in an area with good soils that are not too wet. A garden near other existing habitat is better than an isolated island of habitat.

Leave residual vegetation (dead stems) in the garden until warm weather arrives in the spring. Many cavity nesting pollinators use dead hollow stems for nesting. Beds can be cleaned once the weather has warmed in the spring and any extra stems or leaves that are not left as mulch can be added to a compost pile.

Plant good nectar sources in the sun. Your key butterfly nectar source plants should receive full sun from mid-morning to mid-afternoon. Butterfly adults generally feed only in the sun. If sunshine is limited in your landscape, try adding butterfly nectar sources to the vegetable garden.

GARDEN DESIGN

- Place taller flowering plants and native grasses towards the back of the flower bed and shorter plants towards the front. This allows better growth and more sun to reach the flowers.
- Use bloom date guide included in this document and have at least one species blooming during all seasons, from April to October.
- Place clusters of each species (4-6 plants) rather than random scattered plants. Pollinators are more attracted to a cluster of plants that are blooming at the same time.
- Use the bloom color guide to select several different colors of flowers rather than all one color such as yellow or purple.
- Cover the garden area with a thick layer of mulch after planting (if using plugs or potted plants) or wait until seedlings have developed before mulching if using seed. Make sure to leave at least one bare ground area for ground nesting bees.

INFORMATION PROVIDED BY THE SOUTH DAKOTA SOIL HEALTH COALITION – sdsoilhealthcoalition.com

THE GROWING CONCERN OVER PFAS AND LITHIUM IN SOUTH DAKOTA'S WATER

Recently, there has been increasing awareness of contaminants in drinking water, with two substances drawing particular attention: per- and polyfluoroalkyl substances (PFAS) and lithium. Like many other states, South Dakota has begun rigorous testing to assess and address these contaminants, which pose potential risks to public health and the environment.

What Are PFAS?

PFAS, often referred to as "forever chemicals," are a group of synthetic compounds used in various industrial and consumer products due to their resistance to water, grease, and heat. These chemicals are commonly found in non-stick cookware, waterproof clothing, firefighting foams, and certain food packaging. While their durability makes them useful, it also means they persist in the environment and accumulate in human and animal tissues over time.

Studies have linked PFAS exposure to a range of health issues, including:

- Increased cholesterol levels
- Hormonal disruptions
- Immune system suppression
- Certain cancers

Given these potential risks, the U.S. Environmental Protection Agency (EPA) has been working to establish stricter guidelines for PFAS levels in drinking water. This has prompted states like South Dakota to conduct widespread testing to better understand the prevalence of these chemicals in local water systems.

Why Test for Lithium?

Lithium is a naturally occurring element found in rocks, soil, and water. It has various industrial applications, including rechargeable batteries, ceramics, and pharmaceuticals. While the EPA does not currently regulate lithium as a contaminant, its presence in drinking water

has raised questions about its long-term health effects.

Low levels of lithium in water have been linked to potential mental health benefits, such as reduced rates of depression and suicide. However, excessive exposure could lead to health issues, including kidney damage and thyroid dysfunction. The increasing demand for lithium due to the rise in electric vehicles and renewable energy storage systems has also raised concerns about potential environmental contamination from mining and industrial processes.

South Dakota's decision to test for PFAS and lithium reflects a broader commitment to public health and ensuring the sustainability of its water resources. Key factors driving these efforts include:

1. **Federal Guidelines and Funding:** The federal government has prioritized addressing PFAS contamination through initiatives like the Bipartisan Infrastructure Law, which allocates water testing and treatment funding.

2. **Local Concerns:** Communities across South Dakota rely on groundwater for drinking water, making monitoring and addressing potential contaminants essential to prevent long-term health risks.

3. **Economic Implications:** As South Dakota's economy benefits from industries like agriculture and tourism, clean water is a cornerstone for both public trust and sustainable growth.

Testing for contaminants is just the first step. Effective remediation and prevention strategies will require:

- **Advanced Treatment Technologies:** Removing PFAS and lithium from water often involves specialized filtration systems, such as activated carbon or reverse osmosis.

- **Public Education:** Informing residents about the sources and risks of these contaminants empowers communities to advocate for stronger protections.

- **Collaboration:** Federal, state, and local governments must work together to fund and implement solutions that address contamination at its source.

As science continues to uncover the impacts of PFAS and lithium on health and the environment, South Dakota's proactive testing initiatives serve as a model for other states. By addressing these issues now, the state is taking important steps to ensure the safety and sustainability of its water resources for future generations.

In a world where clean water is an increasingly precious resource, vigilance and action are not just necessary – they are imperative.

HOW YOUR WATER SOURCE AFFECTS QUALITY & CHEMISTRY

Water is essential to life, but did you know that its source plays a crucial role in determining its quality, taste, and safety? Whether your water comes from a river, lake, or underground aquifer, the differences in origin impact everything from mineral content to the presence of contaminants. Understanding these distinctions can help consumers make informed choices about their water consumption and treatment needs.

SURFACE WATER VS. GROUNDWATER: WHAT'S THE DIFFERENCE?

Water supplies generally fall into two categories: surface water and groundwater. Surface water is sourced from lakes, rivers, and reservoirs, while groundwater comes from underground aquifers accessed through wells. Because surface water is exposed to environmental factors, it tends to have more organic contaminants and microbial activity. In contrast, groundwater is filtered naturally through layers of rock and soil, giving it a different chemical composition.

WHAT'S IN YOUR WATER? A LOOK AT CONTAMINANTS AND CHEMISTRY:

Surface Water Characteristics

- **Higher Microbial Activity** – Rivers and lakes are open to environmental exposure, making them more susceptible to bacteria, viruses, and parasites from runoff and wastewater discharge. This is why surface water typically requires extensive filtration and disinfection.
- **Organic and Chemical Contaminants** – Pesticides, herbicides, and industrial pollutants can wash into surface water sources, increasing the need for advanced treatment methods.
- **Nutrient Pollution** – Fertilizers used in agriculture can contribute to high nitrogen and phosphorus levels, leading to algal blooms and taste or odor issues.
- **Turbidity** (Cloudiness) – Surface water often contains suspended particles from soil erosion, making it appear murky and requiring additional treatment to remove sediments.

Groundwater Characteristics

- **Higher Mineral Content** – As groundwater moves

through rock layers, it absorbs minerals like calcium, magnesium, and iron, which can contribute to water hardness and scaling in pipes and appliances.

- **Natural Contaminants** – Elements like arsenic, fluoride, and radon can be found in certain groundwater sources, sometimes requiring specialized treatment.
- **Lower Microbial Risk** – Because groundwater is naturally filtered through soil and rock, it generally contains fewer bacteria and viruses, though shallow wells can still be vulnerable to contamination.
- **Stable Chemistry** – Groundwater usually has a more consistent pH and alkalinity compared to surface water, which can fluctuate due to acid rain, industrial runoff, and seasonal changes.

How Water Treatment Adapts to Different Sources

Since surface water and groundwater have distinct characteristics, their treatment methods also differ:

Surface water treatment focuses on removing pathogens, sediments, and pollutants. This often includes filtration, coagulation, sedimentation, and disinfection processes like chlorination or ultraviolet (UV) treatment.

Groundwater treatment typically addresses mineral content, heavy metals, and natural contaminants. Techniques like water softening, reverse osmosis, and aeration help remove excess minerals and unwanted elements.

The Role of Climate and Geography in Water Quality

Climate and geographic factors significantly impact water quality and availability. Regions with heavy rainfall and dense vegetation often have more abundant surface water sources, while arid areas rely heavily on groundwater. Seasonal changes can affect water levels, temperature, and contamination risks. For instance:

Drought-prone regions may experience lower groundwater recharge, leading to higher mineral concentrations and water scarcity.

Coastal areas may face saltwater intrusion in freshwater supplies, requiring desalination efforts.

Industrial and agricultural zones are more likely to experience contamination from chemicals, fertilizers, and heavy metals seeping into both surface and groundwater.

Water Quality Testing and Consumer Awareness

Regular water testing is crucial for both municipal and private water sources. Public water systems are required to comply with Environmental Protection Agency (EPA) regulations, ensuring safe drinking water through rigorous monitoring. However, private well owners must take responsibility for testing their water for contaminants like bacteria, nitrates, and heavy metals.

What This Means for You

If your water comes from a municipal supply, rest assured that it undergoes rigorous testing and treatment to meet safety standards. However, if you rely on a private well, regular testing is essential to ensure safe drinking water, as groundwater quality can vary based on location and environmental factors.

Understanding how water quality is shaped by nature and human activity can help you appreciate the journey your water takes before it reaches your tap.

Understanding how water quality is shaped by nature and human activity can help you appreciate the journey your water takes before it reaches your tap. Whether you prefer the crisp taste of surface water or the mineral-rich quality of groundwater, being informed empowers you to make the best choices for your household's water needs.

Future Trends in Water Treatment and Sustainability

As technology advances, new water treatment methods are emerging to improve efficiency and sustainability. Some key trends include:

- **Advanced Filtration Techniques** – Innovations like nanofiltration and membrane bioreactors provide more effective purification while using less energy.
- **Smart Water Monitoring** – IoT-based sensors allow real-time tracking of water quality and usage, helping communities detect contamination faster.
- **Water Reuse and Recycling** – Treated wastewater is increasingly being repurposed for irrigation, industrial use, and even potable water supplies.
- **Desalination Breakthroughs** – Improved desalination technology is making it more cost-effective to convert seawater into drinking water, benefiting coastal and drought-affected regions.

By staying informed about these developments, consumers can make more sustainable water choices and contribute to a future where clean water remains accessible for all.

CLAY RURAL WATER SYSTEM

In January 1975, Clay County Extension Agent Bob Schurrer launched an ambitious initiative—surveying every farm and landowner in the county to gather information about water quality and availability. The survey also posed a pivotal question: Were residents interested in developing a rural water system? The response was overwhelming, with more than half expressing interest.

At the time, many rural residents faced significant water challenges. Wells in parts of the county contained high mineral levels, and many families relied on hauling water to cisterns on their farms and acreages. Recognizing the need for a sustainable solution, Schurrer and other community leaders took action.

In March 1975, three informational meetings were held across Clay County to discuss the feasibility of a rural water system. The primary advantage? Convenience. Attendees recognized the potential benefits, including improved water quality, consistent pressure, and a dependable supply during droughts. Encouraged by positive feedback, a steering committee was formed to further explore the idea.

The first organizational meeting took place on April 29, 1975, at the 4-H Center in Vermillion, drawing approximately 60 rural residents. With enthusiasm high, the group elected a 12-member Board of Directors, with Ken Mockler of Vermillion named Chairman. Rural resident Jack DeVany stepped forward to serve as the system's attorney, and by July 21, 1975, Clay Rural Water System was officially incorporated.

Establishing a rural water system was no small task. With little precedent to follow, the Board, along with Schurrer and DeVany, embarked on one of the most significant infrastructure efforts since rural electrification decades earlier. They had to answer a key question: "Why a rural water system?"

The answer was clear. A centralized system would provide clean water directly to the homes and farms. Additionally, improved water quality would protect plumbing fixtures and pipes, and livestock would benefit from a steady supply of water.

As interest spread beyond Clay County, the project's scope expanded to include Union County. The Board enlisted the engineering firm DeWild Grant Reckert and Associates (DGR) of Rock Rapids to conduct a feasibility study. Completed in January 1976, the report confirmed the system's viability, citing a service area that included 3,000 people, 1,700 dairy cattle, 59,000 feeder and stock cows, and 94,000 hogs and sheep.

The first annual meeting of Clay Rural Water System was held in January 1976, with Ernest Schmidt elected as Chairman. Sign-ups quickly began, with meetings in Wakonda, Garryowen, the SE Research Farm, and Vermillion. Within three days, 730 locations joined, eventually reaching 980 members, each paying a $200 hookup fee.

Securing funding was the next crucial step. In February 1976, the Board submitted a loan and grant application to the Farmers Home Administration. By fall 1977, funding was approved - a $3.35 million loan, a $660,000 grant, and a $300,000 state grant. Hookup fees from new members helped cover the remaining costs.

Construction began swiftly, and by the end of the process, Clay Rural Water System was serving nearly 1,000 members, delivering quality water to approximately 3,500 people and thousands of livestock. From concept to completion, the transformation took just five years.

Since its inception, Clay Rural Water has expanded tremendously. Membership has more than doubled, and system capacity has significantly increased. Initially,

CLAY RURAL WATER SYSTEM

the system could treat 1.2 million gallons per day (MGD); today, it handles 1.5 MGD. Storage capacity has grown from 760,000 gallons to 1.21 million gallons.

A major milestone occurred in 1996 when the water plant was remodeled into a softening plant, further enhancing water quality. Today, most customers receive water from the Wakonda Water Treatment Plant, a 1.2 MGD facility utilizing lime softening. The plant draws from two high-capacity wells in the Lower Vermillion-Upper Missouri Aquifer, each producing over 1,000 gallons per minute (gpm). Customers in southern Union County receive water from the Wynstone Water Treatment Plant, which uses reverse-osmosis technology and wells in the Dakota Formation Aquifer, each yielding 350 gpm.

With total membership now at 2,555, Clay Rural Water System continues to innovate. In April 2022, the system secured a $7.44 million American Rescue Plan Act (ARPA) grant to fund the "Chapter Project," installing nearly 85,000 feet of pipeline to improve pressure, increase capacity, and address water loss issues.

The system's commitment to progress remains strong. In 2024, Clay Rural Water System received an additional $2.49 million ARPA grant to construct two ground storage reservoirs near the Greenfield reservoir and Wakonda Water Treatment Plant. The project also includes a new booster station and distribution line improvements to accommodate a Highway 46 construction project.

Further improvements include replacing the Spink booster station, originally installed in 1979. The upgraded booster will enhance water loss monitoring and improve pressure zones in the Akron and Spink areas. The Clay Rural Water System is on the move again this spring continuing with the final stages of the existing Phase I project, and moving forward with the design process of Phase II, which is the new Water Treatment Plant next to the Wakonda location.

From its humble beginnings to its role as a vital community resource, Clay Rural Water System has consistently adapted to meet the needs of its members. What began as a simple survey in 1975 has evolved into a modern, high-capacity water system supporting thousands of people and businesses across the region. As it continues to expand and modernize, Clay Rural Water System stands as a testament to vision, perseverance, and community commitment.

DIRECTORS:

Randy Huot – President
Cody Merrigan – Vice President
Patricia Manning – Secretary/Treasurer
Mark Bottolfson – State Association Director
Tim Irwin – Director
Ken Kessler – Director
Jerry Buum – Director
Randy Ronning – Director
Josh Wendling – Director

STAFF:

Steve Muilenburg, Manager
Donna Henriksen, Office Manager
Pamela Lunning, Controller
Rob Ganschow, Chief Treatment Plant Operator
Andy Ganschow, Chief Distribution Operator
Phil Iverson, System Operator
Lane Severson, System Operator
Matt Thompson, System Operator

STATISTICS:

Hookups: 2,555

Miles of Pipeline: 1,405

Water Source: Groundwater (Lower Vermillion-Upper Missouri), Dakota Aquifer

Counties Served: Clay, Union, parts of Lincoln, Turner, and Yankton

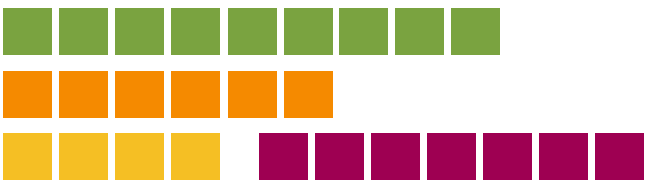
Towns Served Individual: Burbank, Meckling, Deer Run

Towns Served Bulk: Wakonda, Gayville

RURAL WATER CROSSWORD & WORD SCRAMBLE CONTEST

LOCAL FLORA

SCRAMBLE ANSWER



Enter to Win $100

Across

4. Fragrant purple or white flower commonly found in shrubs
8. South Dakota's state flower, blooms early in spring
10. Native prairie flower known for its immune-boosting properties
12. Tall, bright flower that follows the sun
13. Perennial flower that blooms for just one day
14. Colorful garden annual that attracts butterflies

Down

1. A yellow wildflower with a dark center, often seen in meadows
2. Also known as bee balm, loved by pollinators
3. Simple white flower with a yellow center, often used in 'he loves me, he loves me not'
5. Popular garden flower available in many colors, often used in hanging baskets
6. Bright orange or yellow flower known for pest resistance
7. Essential plant for monarch butterflies
9. Fragrant, large blooms often seen in wedding bouquets
11. Spring-blooming bulb famous in Dutch gardens

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** with the correct phrase by April 15, 2025 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 Douglas Lynch from Brookings-Deuel Rural Water who had the correct phrase of "feels like hot cocoa weather" for January 2025.

SOUTH DAKOTA RURAL WATER
APPRENTICESHIP PROGRAM
For Water & Wastewater Operators

The South Dakota Association of Rural Water Systems (SDARWS) is developing a **Registered Apprenticeship Program**. The Apprenticeship Program will be a combination of On-the-Job training (OJT) and Related Technical Instruction (RTI) in which the apprentice is provided the tools necessary to be a successful **Operations Specialist** in the water or wastewater field.

- **Earn-as-you-learn program**
- **Accelerated pathway into the water and wastewater industry**
- **Work with qualified mentor from participating employer**
- **Progressive wage schedule**

APPLICATION REQUIREMENTS:

- Must be at least 18-years-old
- Must have high school diploma, GED equivalency, or other high school equivalency credential
- Must be physically capable of performing the essential functions of the program
- Must possess a valid state issued driver's license

TWO OPTIONS AVAILABLE

- Water Systems Operation Specialist
- Wastewater Systems Operation Specialist

The Apprenticeship Program should take approximately two years to complete.

- ☐ 4,000 hours of On-the-Job Training (OJT) required
- ☐ 288 hours of Related Technical Instruction (RTI) required

LEARN MORE AT sdarws.com/waterworks

FOR MORE INFORMATION, CONTACT:

Sue Bergheim, SDARWS Apprenticeship Coordinator
sbergheim@sdarws.com
605-556-7219 or 605-501-9208

SDARWS
South Dakota Association of Rural Water Systems

Annual Drinking Water Quality Report
— Aurora-Brule Rural Water System —
January 1, 2024 – December 31, 2024

Introduction
The purpose of this report is to inform you of the quality of the drinking water that we provide. We are required by the U.S. Environmental Protection Agency (EPA) to test our water frequently for the presence and concentrations of over 80 different substances. The South Dakota Department of Agriculture and Natural Resources (DANR) reviews all of our testing data to ensure that 1) we are providing safe drinking water to our customers, and 2) we are complying with EPA regulations.

We want you to fully understand the information contained in this report. If you have any questions, please contact:

Wade Blasius
Aurora-Brule Rural Water System, Inc.
P.O. Box 140 | Kimball, SD 57355
Phone: (605) 778-6110 or Toll Free 1-888-282-2497

Information provided by the EPA
Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline 800-426-4791.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline 800-426-4791.

Where does our water come from?
The source of our drinking water is surface water from Fort Randall Reservoir, on the Missouri River. Aurora-Brule RWS purchases some water from the Randall Community Water District, which has the same source. The Missouri River drains most of Montana and North Dakota, and most of western South Dakota.

Why do we test our drinking water?
The water we pump from Fort Randall Reservoir is surface water that comes from the Missouri River and other streams upstream of our intake. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals, and can pick up substances resulting from the presence of animals or from human activity. Too much of any substance, either naturally occurring or resulting from human activities can be considered a contaminant.

Contaminants that can occur in source water include:

1. ***Microbial Contaminants***, such as viruses and bacteria, which can come from human sewage or livestock waste disposal facilities, and wildlife,
2. ***Inorganic Contaminants***, such as salts and metals, which are generally naturally-occurring in this area;
3. ***Pesticides and Herbicides***, from both residential and agricultural use,
4. ***Organic Chemical Contaminants***, including synthetic and volatile organic chemicals, which can come from leaking gas storage tanks, urban storm water runoff, agricultural runoff, and septic systems, and
5. ***Radioactive Contaminants***, which are naturally occurring in some of the rocks in South Dakota.

In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

What treatment does our water receive?
Aurora-Brule Rural Water and Randall Community Water District utilize the same method of treatment. The first stage of the treatment process is a screen at the intake station. This screen keeps out relatively large debris such as driftwood, fish, etc. The water is pumped from the intake station to the treatment plant. At the treatment plant, a coagulant is added to the water. The coagulant makes small, microscopic particles and impurities stick together to form larger particles. This makes the smaller particles easier to remove. After the water is treated with the coagulant, it is filtered to remove the particles and other impurities normally found in lake water. We add potassium permanganate to remove tastes and odors caused by decaying organic material, such as dead leaves. We also add chlorine and ammonia which forms chloramines to kill any bacteria that may be in the water.

Summary of 2024 Water Quality Tests Results
We are pleased to report that our water in 2024 was in compliance with all EPA and state water quality standards.

Although we routinely test our water for over 80 different substances, only those 10 substances shown in the table were detected. With the exception of lead and fluoride, all of these 10 substances are naturally occurring.

Alpha emitters, antimony, arsenic, barium, chromium, and selenium are all substances that are naturally occurring in the rocks and soil within the Missouri River watershed. These six substances were well below the highest level allowed by EPA.

Sulfate is also a substance that is naturally occurring in the rocks and soil within the region. Sulfates have not been demonstrated to pose any health risks and are therefore not regulated by the EPA. We monitor for sulfates to provide information to the EPA and the DANR

regarding the occurrence of sulfates in drinking water. EPA may use this information and information from other drinking water providers throughout the United States, to determine if sulfates should be regulated in the future.

Turbidity is a measure of the cloudiness of the water. We monitor it daily because it is a good indicator of the effectiveness of our filtration system. Turbidity levels vary due to changes in surface water runoff. The turbidity levels measured in 2024 were well within the acceptable range of levels allowed by the EPA. Fluoride is naturally present at low levels in our water.

We monitor for lead and copper in some of our customer's homes to determine if it is leaching from plumbing fixtures. Due to the chemical stability of the water we produce, the measured lead and copper levels are low and are well below the highest level allowed by EPA.

We Welcome Your Input

We have an annual meeting every year for our customers. We mail invitations stating the time and place of the annual meeting to all of our members. Additionally, our Board of Directors meets on the second Tuesday of every month at the main office located in Kimball, SD. If you would like to attend one of the board meetings, please notify Wade Blasius at the address and phone number listed at the beginning of this report.

2024 Table of Detected Contaminants For Aurora-Brule Rural Water System (EPA ID 0621)

The Aurora-Brule Rural Water System public water system purchases 22% of their water from Randall Community Water District (0433)

Substance	90% Level	Test Sites > Action Level	Date Tested	Highest Level Allowed (AL)	Ideal Goal	Units	Major Source of Contaminant
Copper	0.2	0	06/19/24	AL=1.3	0	ppm	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives.
Lead	4	0	06/19/24	AL=15	0	ppb	Corrosion of household plumbing systems; erosion of natural deposits.

Substance	Highest Level Detected	Range	Date Tested	Highest Level Allowed (MCL)	Ideal Goal (MCLG)	Units	Major Source of Contaminant
Alpha emitters *	6	ND - 6	12/06/21	15	0	pCi/l	Erosion of natural deposits.
Antimony	0.3		03/22/21	6	6	ppb	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder.
Arsenic	1		03/22/21	10	0	ppb	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes.
Atrazine *	0.430	ND - 0.430	07/31/24	3	3	ppb	Runoff from herbicide used on row crops.
Barium *	0.042	0.038 - 0.042	12/06/21	2	2	ppm	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
Barium	0.032		03/22/21	2	2	ppm	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
Chromium	0.68		03/22/21	100	100	ppb	Discharge from steel and pulp mills; erosion of natural deposits.
Fluoride *	0.54	0.53 - 0.54	10/21/24	4	<4	ppm	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
Fluoride	0.51		11/04/24	4	<4	ppm	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
Haloacetic Acids (RAA) *	26.9		08/27/24	60	0	ppb	By-product of drinking water chlorination. Results are reported as a running annual average of test results.
Haloacetic Acids (RAA)	3.51		12/30/24	60	0	ppb	By-product of drinking water chlorination. Results are reported as a running annual average of test results.
Selenium	1.42		03/22/21	50	50	ppb	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines.
Total Coliform Bacteria	1	positive samples		1	0	pspm	Naturally present in the environment.
Total trihalomethanes (RAA) *	48.7		08/27/24	80	0	ppb	By-product of drinking water chlorination. Results are reported as a running annual average of test results.
Total trihalomethanes (RAA)	4.85		12/30/24	80	0	ppb	By-product of drinking water chlorination. Results are reported as a running annual average of test results.
Turbidity *	0.54	97% samples below 0.3	03/01/24	TT	NA	NTU	Soil runoff. Turbidity is a measurement of the clarity of the water.
Turbidity	0.21	100% samples below 0.3	04/01/24	TT	NA	NTU	Soil runoff. Turbidity is a measurement of the clarity of the water.

Please direct questions regarding this information to Mr. Wade Blasius with the Aurora-Brule Rural Water System at 605-778-6110.
****Randall Community Water District (0433) test result.***

Terms & Abbreviations Used in Tables

Action Level (AL) – the concentration of a contaminant which, when exceeded, triggers treatment or other requirements which a water system must follow. For Lead and Copper, 90% of the samples must be below the AL.

Maximum Contaminant Level (MCL) – The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Contaminant Level Goal (MCLG) – The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Treatment Technique (TT) – A required process intended to reduce the level of a contaminant in drinking water. For turbidity, 95% of samples must be less than 0.3 NTU.

Running Annual Average (RAA) – Compliance is calculated using the running annual average of samples from designated monitoring locations.

UNITS

ppb – parts per billion, or micrograms per liter (ug/l)
ppm – parts per million, or milligrams per liter (mg/l)
pspm – positive samples per month

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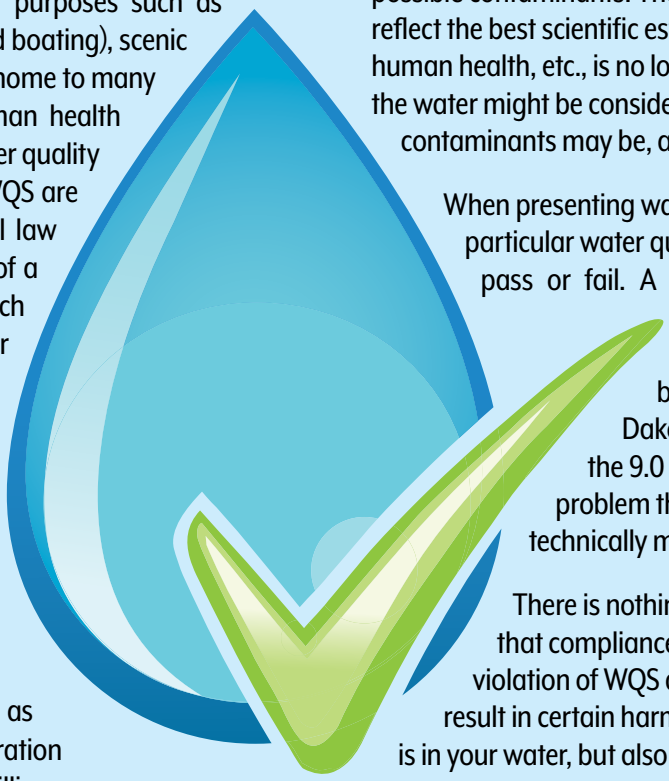
WATER MATTERS

WATER QUALITY STANDARDS

Water bodies can be used for purposes such as recreation (e.g. swimming and boating), scenic enjoyment and fishing, and are the home to many aquatic organisms. To protect human health and aquatic life in these waters, water quality standards (WQS) are established. WQS are provisions of state, tribal or federal law that describe the desired condition of a water body and the means by which that condition will be protected or achieved. Further, WQS form a legal basis for controlling pollutants entering these waters.



Standards are typically defined in terms of an acceptable concentration or level of a particular chemical, physical or biologic parameter. For example, in South Dakota, for waters designated as drinking water supplies, the concentration of nitrate (NO3-) cannot exceed 10 milligrams per liter (mg/L). Waters designated as cold-water fisheries (trout streams), water temperature cannot exceed 65°F. If swimming immersion recreation (in government speak) is the goal, levels of Escherichia coli (E. coli) bacteria in excess of 235 colonies per 100 milliliters of sample are considered problematic.

It is important to understand that while WQS have been established for most water bodies in the State, compliance with the WQS does not mean that the water is completely free of any possible contaminants. The established standards most often reflect the best scientific estimate of when the potential risk to human health, etc., is no longer statistically acceptable. Although the water might be considered safe from a regulatory standpoint, contaminants may be, and most likely are, still present.

When presenting water quality information, the results of a particular water quality test are often expressed as either pass or fail. A nitrate reading of 9.0 mg/L would be considered 'acceptable,' as it is below the 10 mg/L WQS. However, background nitrate levels in South Dakota waters rarely exceed 1-2 mg/L, so the 9.0 reading is strongly suggestive of a problem that ought to be addressed, even if it technically meets the WQS.

There is nothing magic about WQS that would mean that compliance translates to zero risk. Similarly, violation of WQS does not mean that interaction will result in certain harm. It is important to know not only what is in your water, but also what this really means.

What are South Dakota's water quality standards? They can be found in Chapter 74:51:01 of the Administrative Rules of South Dakota. https://sdlegislature.gov/Rules/DisplayRule.aspx?Rule=74:51:01

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