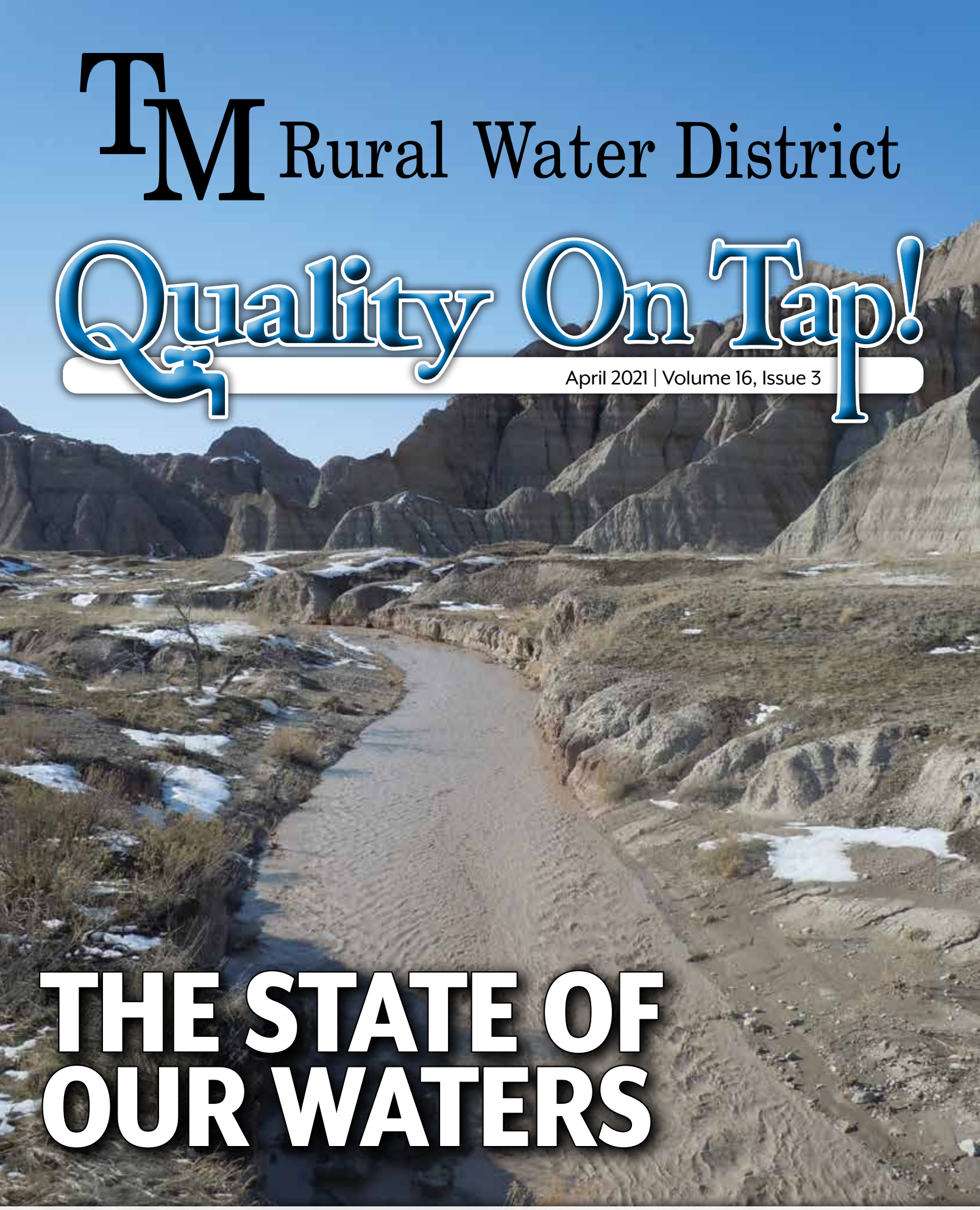
TM Rural Water District

Quality On Tap!

April 2021 | Volume 16, Issue 3



THE STATE OF OUR WATERS

FROM THE MANAGER | TM TRIVIA | NOTICE OF DIRECTOR VACANCY

FROM THE MANAGER

Jay Jorgensen
Jay.Jorgensen@tmruralwater.com

As I am writing this for the April issue of *Quality on Tap*, we are just coming out of the mid-February deep freeze. That was quite a cold front that swept thru the nation going all the way down into Texas and resulting in the first ever rolling power blackouts in the State of South Dakota. It is a good reminder that mother nature can really through a wrench into the workings of our nation's utility infrastructure and when it comes to emergency planning you cannot take anything off the table. TM Rural Water District is currently working on a water utility Risk & Resilience Plan which is required by the Environmental Protection Agency. Going thru this planning process allows our water system to take a focused look at everything that could affect the operation of our water system ranging from extreme weather events to terrorism. Once we assess our risk, we develop contingency plans on how to deal with each event if it were to occur. The staff at TM take our job of providing a constant supply of safe drinking water to our customers very seriously and we will continue to do what is needed to keep this vital resource safe, secure, and flowing.

Summer will be here before we know it and we have already received seven new application for water service to be installed this spring. If you know someone that is thinking about hooking up to the system, please tell them to call in to get put on the list.

Annual Water Quality Report

You will find TM's Annual Drinking Water Report on pages 14-15. Every year we are required to publish this report to all water users on our system. The report represents the results of water testing done by the District during 2020 and gives a breakdown of the District's source waters and treatment processes. TM is pleased to report that the District complied with all state and federal drinking water regulations in 2020.

Just a reminder that TM's website is up and operational and can be accessed by typing www.tmruralwater.com into your internet browser. On this site you will be able to access forms and documents relating to the District, and you also have the option to pay your water bill online utilizing debit/credit card or an echeck.

Repairing leaks is a big part of the maintenance that TM performs each year, and we rely on our users to call in if they see a potential leak. Please do not hesitate to call if you suspect a leak, and the sooner the better, fixing leaks early reduces expenses to the system which benefits all users in the District. If in doubt, call us out.

And once again, thank you for choosing TM Rural Water District for your source of clean, reliable drinking water.

TM Rural Water District
Quality On Tap!

BOARD OF DIRECTORS

Greg Wirth, President – Viborg
Dennis R. Johnson, Vice President – Parker
Steve Knutson, Secretary – Centerville
Greg Nugteren, Treasurer/ SDARWS Director – Monroe
Dennis M. Johnson – Canistota
Curt Matthies – Marion
Robin Christiansen – Viborg

STAFF

Jay Jorgensen, Manager
Tanya Wickstrom, Bookkeeper
David Viet, WTP Operator
Wade Kunkel, Operator
Greg Simmermon, Operator
Jason Krumbach, Operator

CONTACT US

110 North Main
Box 445
Parker, SD 57053
605-297-3334 / 1-877-242-3420
E-mail: tmrwd@iw.net

OFFICE HOURS

8:00 am - Noon & 12:30 pm - 4:30 pm
Monday - Thursday
Office is Closed
Friday-Sunday and Holidays

TM Rural Water District Quality On Tap! is published quarterly by TM Rural Water District, PO Box 445, Parker, SD 57053 for its water users

TM Rural Water District CALENDAR

MARCH 22ND
TM Rural Water District Board Meeting in Parker at 7:00 PM

APRIL 2ND
Good Friday Holiday

APRIL 26TH
TM Rural Water District Board Meeting in Parker at 8:00 PM

MAY 24TH
TM Rural Water District Board Meeting in Parker at 8:00 PM

If you have an emergency, please call the office at 605-297-3334.

TM RURAL WATER DISTRICT'S MISSION

TM Rural Water District's goal is to improve the quality of life in the rural and small community areas of our state. The District is committed to providing the highest quality drinking water possible at the lowest reasonable cost consistent with good business practices. As a water user district, the only other product that we have is the service we provide the users. The District goal is that the service is offered with the highest standards.

MONTHLY PAYMENT OPTIONS

Cash, Check, E-Check, Credit Card or Money Order
Automatic Bank Deductions (ACH)

www.tmruralwater.com
(click "Pay Online Now" button)

Just for Laughs:

Back in the 1990's my wife's grandfather Praben Lee, a full-blooded Norwegian retired from farming and moved to Viborg SD, a traditionally Danish town. We stopped by one day to visit him to ask how he and Dagmar were getting along in their new home in Viborg. Praben said, "Well Jay, not very good, the little Danish kids in town keep throwing fire-crackers at our house as they ride by on their bikes." I said, "I'm sorry to hear that Praben, is there anything I can do?" Praben smiles smugly and says, "No, I taught them a lesson, I lit the fire-crackers and threw'em back at them." I could not help but laugh.

"There is nothing in the world so irresistibly contagious as laughter and good humor."

– Charles Dickens

TM TRIVIA

In this edition of *Quality on Tap*, be the first person to call Tanya with correct answers to the following questions below at 605-297-3334 to receive $10 off your next water bill. A second place drawing for $10 off your next water bill will also be taken from those people who call in after the initial winner, so don't give up.

South Dakotans have our own words for describing things others in the nation have a hard time understanding. I am sure you will all be able to figure out these South Dakotaisms.

South Dakotaisms

1. **Tavern or Sloppy Joe?**
2. **(Noon meal) lunch or dinner?**
3. **South Dakota State Capital Pierre pronunciation Pee-air or Peer?**
4. **Casserole or Hotdish?**
5. **Diagonally or Kitty Corner?**
6. **Crick or Creek?**
7. **Describe what Chislic is as if you were speaking to an out of state'r.** ***(My spell correct hates the word Chislic as it is not in the dictionary.)***

TM Rural Water District employs six full-time employees from three different communities in the areas that we serve. Whenever possible we attempt to buy our supplies and consumables locally and prefer to hire local contractors when the need arises. We are thankful to have the ability to serve the communities and rural areas in which we live and hope that our service will continue to be a benefit to everyone in our District.

TAKING CARE OF OUR WATERSHED

A lake is a magnificent water resource. The quality of its water is a reflection of what happens on the land that surrounds it. Rain and melting snow flow across fields, towns, and roads, picking up pollutants along the way.

To protect the lake, we must protect the "watershed," the land that drains or sheds its water into the lake.

The health of a watershed depends on the kinds of activities happening in the watershed. Is there anyone fertilizing their lawn, farming, raising livestock, using an automobile, or working on construction?

Federal, state, and local agencies, as well as non-profit organizations, and even local citizens help protect watersheds every day. You can do your part, too! We all have a responsibility to keep the watershed we live in clean and healthy for all living things. Be aware of your activities and how they might affect the environment.

Find and circle the eight pollutants listed below. Use the remaining un-circled letters to complete the phrase.

hint: start with the top row and move left, filling in with each un-circled letter.

- ☐ CHEMICALS
- ☐ MANURE
- ☐ NUTRIENTS
- ☐ OIL
- ☐ FERTILIZER
- ☐ PESTICIDE
- ☐ SALT
- ☐ SEDIMENT

N	O	N	F	P	O	I	C	E	R	U	N	A	M	N
T	S	O	U	E	R	S	H	C	E	P	O	L	L	U
T	I	O	N	L	R	H	E	V	U	R	G	X	D	F
G	F	G	Z	I	A	T	M	D	F	W	N	H	T	N
E	U	Y	U	O	Y	D	I	L	I	Z	T	Y	P	V
E	B	J	K	T	R	R	C	L	C	M	Z	P	M	K
G	D	J	P	A	Q	P	A	U	I	D	E	Q	T	F
K	J	I	D	P	A	J	L	B	J	Z	C	N	E	Q
A	L	P	C	F	X	H	S	A	P	D	E	L	T	V
H	Y	X	L	I	X	V	D	G	C	O	H	R	A	K
Z	D	K	R	F	T	O	V	L	E	F	N	T	G	G
X	F	E	S	D	F	S	J	Q	X	M	I	Z	O	T
G	I	J	W	D	B	H	E	T	L	A	S	C	W	U
M	N	T	Z	R	W	D	V	P	J	M	M	K	J	T
J	A	N	U	T	R	I	E	N	T	S	R	I	F	Z

THE NATION'S LARGEST SOURCE OF WATER QUALITY PROBLEMS IS:

_ _ _ - _

This happens when pollutants (like the kind you found in the puzzle) are carried away by precipitation and runoff in our watershed and then deposited into surface water or introduces them into the groundwater.

HOW CAN KIDS HELP?

Here are some fun ways you can get involved in helping protect your watershed!

BECOME A BACKYARDER!

Create a natural environment in your backyard by planting native trees, grasses, and flowers. Taking care of native vegetation is a cinch and it will attract beautiful birds and butterflies!

ORGANIZE A STREAM OR RIVER CLEANUP!

Trash in rivers and streams are not only an eyesore but harmful to aquatic life and other animals that forage the banks for food. Check out the National River Cleanup website for ideas on how to organize a cleanup group!

VOLUNTEER!

Did you know there are citizen monitoring opportunities throughout your area? Volunteer to monitor water quality or become involved in other things such as bird counts or tagging monarch butterflies. You could even start your own monitoring group to monitor something important to you!

TAKE A HIKE!

Look around. See what's going on in the watershed you live in. Document things you feel don't look right and call your local conservation district. They don't know everything happening in the watershed unless they have help from you!

PARTICIPATE IN AN ENVIRONMENTAL EVENT!

Did you know Earth Day is April 22, 2021? Check with your local conservation district or environmental organization for a list of events happing in your watershed. Volunteer to help at the event or just come out and learn more about the environment!

BACKFLOW PREVENTION

Cucumbers, tomatoes, squash, beets ... What are you planting this year? Spring is here, and it's time to plan for that garden, fertilize the lawn, kill some weeds, fill up the pool and wash the car in the driveway.

Something you may not think about is how your outdoor activities have the potential to contaminate your drinking water.

Backflow is the reverse flow of contaminated water through a cross-connection and into pipes of a consumer's drinking water system. A cross-connection is any connection between a potable water supply and other water or fluids of unknown quality. An example is the piping between a public water system or a consumer's potable water system and an auxiliary water system, cooling system or irrigation system.

Types of Backflow

There are two types of backflow: backpressure and backsiphonage. Backpressure backflow occurs when downstream pressure is greater than potable water supply pressure. Backpressure can result from an increase in downstream pressure, a reduction in water supply pressure, or a combination of both. Increases in downstream pressure can be created by pumps or temperature increases in boilers. Reductions in potable water supply pressure occur whenever the amount of water being used exceeds the amount of water being supplied, such as during water line flushing, fire fighting or breaks in water mains.

Backsiphonage is backflow caused by a negative pressure, or a vacuum in a public water system. Backsiphonage can occur when there is a stoppage of water supply due to nearby fire fighting or a break in a water main.

Protect Your Drinking Water

Backflow can make drinking water unsafe, so what measures have you taken to prevent contaminating your water? Rural water systems have been required to install backflow prevention devices on new connections since 1983. However, devices installed by water systems may not be sufficient in certain circumstances. That's why you should still use protective vacuum breakers on outdoor hoses.

So, before you bust out the fertilizer and start the sprinklers, make sure you protect yourself and your family. To avoid contamination, backflow preventers should be installed whenever there is potential for a cross connection.

To find out more about backflow prevention, contact your water system. Together we can maintain the quality of our drinking water!

WHAT IS BACKFLOW?

The undesirable backward flow of water through the pipes of a drinking water system. The backflow of water from home plumbing systems into community drinking water happens when water is pulled backward due to pressure loss in the system or pushed back by a pressure source such as a well pump.

WHAT IS A CROSS-CONNECTION?

Connections between drinking water and other water or fluids of unknown quality. Indirect cross-connections are made by garden hoses and temporary connections. Direct cross-connections are more permanent hard-pipe arrangements.

BACKFLOW PREVENTION TIPS

- Don't submerge hoses in buckets, pools, or sinks.
- Don't use a garden hose to clear a stoppage in a sewer.
- Don't use spray attachments without a backflow prevention device. The chemicals you put on your lawn could be fatal if ingested.
- Don't put a garden hose in anything you wouldn't want to drink.
- Do install vacuum breakers on all threaded faucets around your home.

healthy, productive soils checklist for growers

Managing for soil health is one of the best ways farmers can increase crop productivity while improving the environment.

Results are often realized immediately and last well into the future.
Following are four basic principles to improving the health of your soil.

1. Minimize disturbance
2. Maximize soil cover
3. Maximize biodiversity
4. Maximize presence of living roots

Use the checklist on the next page to determine if you're using core Soil Health Management System farming practices. It is important to note that not all practices are applicable to all crops. Some operations will benefit from just one soil health practice while others may require additional practices for maximum benefit. These core practices form the basis of a Soil Health Management System that can help you optimize your inputs, protect against drought, and increase production.

USDA United States Department of Agriculture

www.nrcs.usda.gov

USDA is an equal opportunity provider, employer, and lender.
March 2017

Soil Health Management Systems Include:

What is it?		What does it do?	How does it help?
Conservation Crop Rotation Growing a diverse number of crops in a planned sequence to increase soil organic matter and biodiversity in the soil.		• Increases nutrient cycling • Manages plant pests (weeds, insects, and diseases) • Reduces sheet, rill and wind erosion • Holds soil moisture • Adds diversity so soil microbes can thrive	• Improves nutrient use efficiency • Decreases use of pesticides • Improves water quality • Conserves water • Improves plant production
Cover Crop An un-harvested crop grown as part of planned rotation to provide conservation benefits to the soil.		• Increases soil organic matter • Prevents soil erosion • Conserves soil moisture • Increases nutrient cycling • Provides nitrogen for plant use • Suppresses weeds • Reduces compaction	• Improves crop production • Improves water quality • Conserves water • Improves nutrient use efficiency • Decreases use of pesticides • Improves water efficiency to crops
No Till A way of growing crops without disturbing the soil through tillage.		• Improves water holding capacity of soil • Increases organic matter • Reduces soil erosion • Reduces energy use • Decreases compaction	• Improves water efficiency • Conserves water • Improves crop production • Improves water quality • Saves renewable resources • Improves air quality • Increases productivity
Mulch Tillage Using tillage methods where the soil surface is disturbed but maintains a high level of crop residue on the surface.		• Reduces soil erosion from wind and rain • Increases soil moisture for plants • Reduces energy use • Increases soil organic matter	• Improves water quality • Conserves water • Saves renewable resources • Improves air quality • Improves crop production
Mulching Applying plant residues or other suitable materials to the soil surface to compensate for loss of residue due to excessive tillage.		• Reduces erosion from wind and rain • Moderates soil temperatures • Increases soil organic matter • Controls weeds • Conserves soil moisture • Reduces dust	• Improves water quality • Improves plant productivity • Increases crop production • Reduces pesticide usage • Conserves water • Improves air quality
Nutrient Management Managing soil nutrients to meet crop needs while minimizing the impact on the environment and the soil.		• Increases plant nutrient uptake • Improves the physical, chemical and biological properties of the soil • Budgets, supplies, and conserves nutrients for plant production • Reduces odors and nitrogen emissions	• Improves water quality • Improves plant production • Improves air quality
Pest Management Managing pests by following an ecological approach that promotes the growth of healthy plants with strong defenses, while increasing stress on pests and enhancing the habitat for beneficial organisms.		• Reduces pesticide risks to water quality • Reduces threat of chemicals entering the air • Decreases pesticide risk to pollinators and other beneficial organisms • Increases soil organic matter	• Improves water quality • Improves air quality • Increases plant pollination • Increases plant productivity

USDA United States Department of Agriculture

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 Environment and Natural Resources (DENR), in cooperation with the United States Environmental Protection Agency (EPA), have 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, DENR 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 most (90% or more) of the analyses from a particular water body meets 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%) and/or severe, then the water body is considered impaired, and not supporting one or more of it's intended uses.

Every two years, DENR 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 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 (2020) South Dakota Integrated Report for Surface Water Quality Assessment is available on the DENR website, https://denr.sd.gov/documents/SD_2020_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 2020 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 are problematic.

So, what happens when an impairment is found? Once a water body is determined to be impaired, DENR 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 over 60 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 it's 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 be significant contributors as well. In some instances, natural, or background, sources have caused impairments.

Once a TMDL report has been prepared, DENR 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.

Efforts to address known water quality impairments are currently active in nearly every major watershed in South Dakota. The Big Sioux River Watershed 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 lower 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? DENR, 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.)

SOUTH DAKOTA ASSOCIATION OF RURAL WATER SYSTEMS

Discussions about rural water began in South Dakota in the late 1960s. By 1972, Butte-Meade Sanitary Water District and Rapid Valley Water Service Company were established and a number of systems were organizing. Lincoln County Rural Water, south of Sioux Falls, was under construction at the time.

Rural water enthusiasts met in Madison, South Dakota, on October 11, 1972. A decision was made to hold a statewide meeting in Pierre on November 30. A letter of invitation went out to 17 systems. The following systems were represented at the November 30, 1972 meeting at the King's Inn in Pierre: Aurora-Brule, Big Sioux, Brookings-Deuel, Minnehaha, Rapid Valley, Sioux, TC & G, and Tripp County.

It was unanimously decided to form a "Steering Committee" and name it the "South Dakota Association of Rural Water Systems." The purpose of the organization was to monitor legislation, avoid duplication of efforts by sharing problems and solutions, and communicate with state and federal agencies concerning funding and regulations. The Association operated as a Steering Committee until January 1976, at which time the State of South Dakota granted a nonprofit corporation charter.

SDARWS, Inc., immediately became involved in forming a national organization. In April 1976, South Dakota joined six other states in Oklahoma City, Oklahoma, to establish the National Rural Water Association. An office was opened in Sioux Falls, South Dakota. South Dakota hosted the second National Rural Water Annual Meeting in Sioux Falls on September 12-13, 1977.

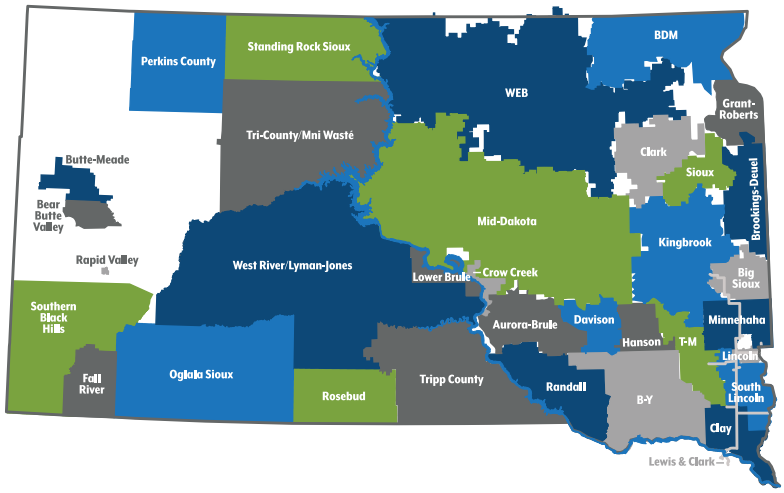
In April 1982, the Association expanded into water system technical assistance. Water treatment and distribution system on-site expertise could now be offered to the many smaller systems. In 1991, with the inclusion of Sanitary Districts, a Wastewater Technician position was added, moving the association forward in its work of preventing water pollution.

As the Association continued to grow and increase in membership, the Board of Directors expanded the Association for the purpose of assisting systems in western South Dakota by establishing the West River Regional Office in January 1991. The West River Office extended benefits and services to members statewide.

The Association is showing growth and movement toward set goals. SDARWS has grown from 2 to 12 employees and has expanded its membership to include nearly 300 organizations. With continued support from members, the challenges and opportunities of the future can and will be met with enthusiasm and cooperation. In February of 2010, the Association returned to Madison where it all started at that meeting in 1972 when an office building was purchased as a headquarters. In 2014 a second office/storage space was purchased in Spearfish as a West River headquarters.

Currently, the Association focuses it's efforts on training and technical assistance for water and wastewater systems, source water protection, and public outreach. They host a three-day Annual Technical Conference every January in Pierre, as well as hold seminars for water/wastewater operations specialists, rural water managers, board members, and office personnel. South Dakota Rural Water is the only water and wastewater association monitoring legislation in both Pierre and Washington, DC. SDARWS registers three lobbyists each year during the state Legislative Session and monitors all bills affecting municipalities, rural water and wastewater systems. SDARWS's lobbyists can be found in Pierre during the entire session and are prepared to activate their legislative network on issues that affect the water/wastewater industry.

SDARWS is proud to produce the *Quality on Tap!* magazine in cooperation with 15 Rural Water Systems: Aurora-Brule, BDM, Big Sioux, Brookings-Deuel, Clark, Clay, Davison, Grant-Roberts, Kingbrook, Mid-Dakota, Sioux, TM, Tripp County, WEB, and West River/Lyman-Jones. The magazine, now in it's 16th year of publication, is produced out of the Madison office by Communiciations & Marketing Coordinator Jennifer Bame.



BOARD OF DIRECTORS:

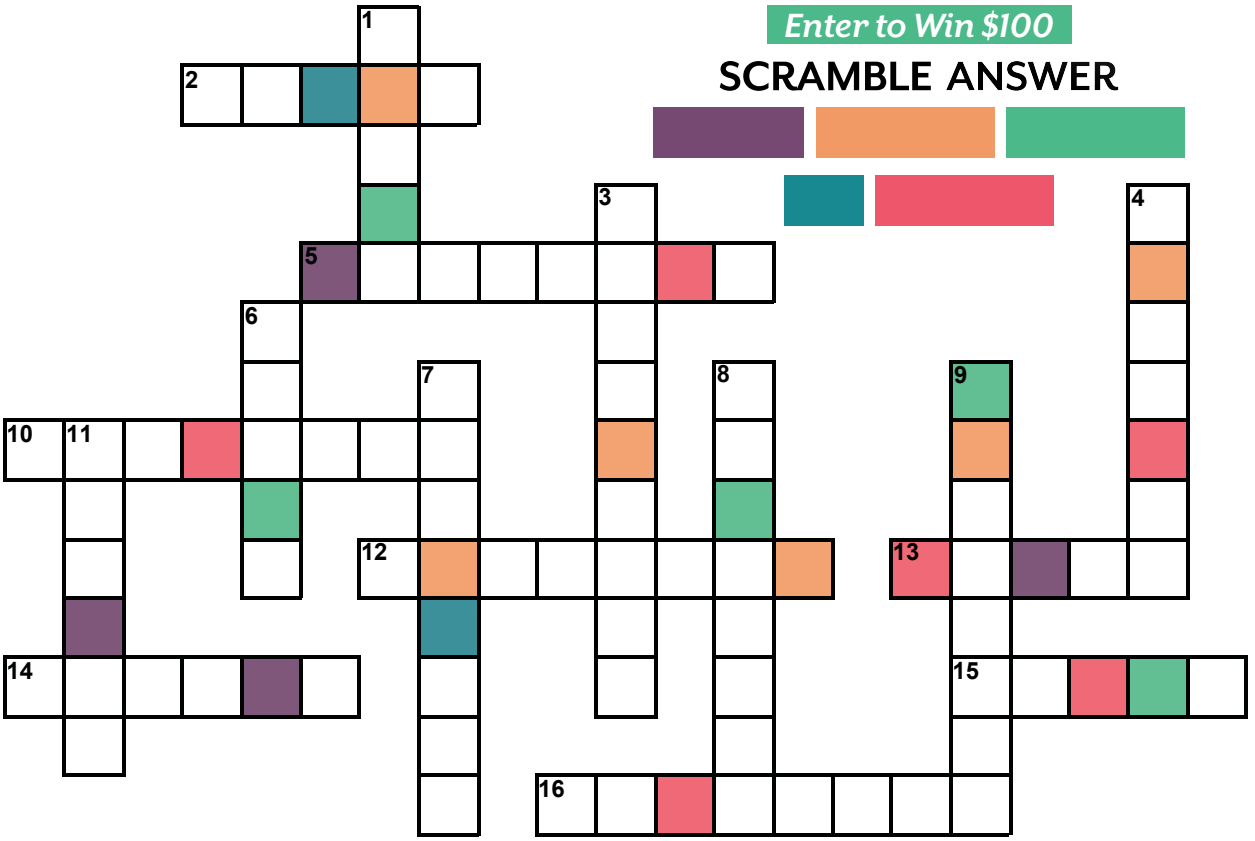
Aurora-Brule Rural Water System – Ron Gillen, President
Kingbrook Rural Water System – Rodney Stormo
Sioux Rural Water System – Jim Thyen, Secretary
Grant-Roberts Rural Water System – Tom Frogner, Treasurer
Big Sioux Community Water System – Dan Carlson, Past President
Clark Rural Water System – Larry Wasland, NRWA Director
Clay Rural Water System – Mark Bottolfson
BDM Rural Water System – Torre Raap
Brookings-Deuel Rural Water System – Gary Johnson
Butte-Meade Sanitary Water District – Bob Lewis
Davison Rural Water System – Bob Weisz
Fall River Water User District – Keith Neugebauer
Hanson Rural Water System – Doug Degen
Lewis & Clark Rural Water System – Sid Munson
Lincoln County Rural Water System – Joe Burns
Mid-Dakota Rural Water System – Jeff McGirr
Minnehaha Community Water Corporation – Lloyd A. Rave
Oglala Sioux Rural Water Supply System – Chuck Jacobs
Perkins County Rural Water System – Lynn Frey
Randall Community Water District – Dave Meyerink
Rapid Valley Sanitary District/Water Service – Bobby Sanner
TM Rural Water District – Greg Nugteren
Tri-County/Mni Wasté Water Association – J.R. Holloway
Tripp County Water User District – Louis Kehn
WEB Water Development Association – Les Hinds
West River/Lyman-Jones Rural Water System – Rick Doud
Class B East River – Brad Lawrence
Class B West River – Jeff Crockett
Class C – VACANT

STAFF:

Kurt Pfeifle – Executive Director
Robyn Brothers – Office Manager
Jennifer Bame – Communications & Marketing
Jeremiah Corbin – Source Water Protection Specialist
Jim Zeck – Training Specialist
Steve Attema – Training Specialist
Mike Moeller – Technical Assistance/Training Specialist
Bill Thorson – Technical Assistance/Training Specialist
Greg Gross – East River Circuit Rider
Jeff Fossum – East River Circuit Rider
Nick Jackson – West River Circuit Rider
Danny Ayers – Wastewater Technician

RURAL WATER CROSSWORD & WORD SCRAMBLE CONTEST

SPRING FLOWERS



Enter to Win $100

SCRAMBLE ANSWER

WORD BANK

- ☐ ASTER
- ☐ DAFFODIL
- ☐ DAISY
- ☐ DAYLILY
- ☐ FOXGLOVE
- ☐ GARDENIA
- ☐ GERANUIM
- ☐ HOLLYHOCK
- ☐ MARIGOLD
- ☐ ORCHID
- ☐ PANSY
- ☐ PEONY
- ☐ PRIMROSE
- ☐ SWEETPEA
- ☐ TULIP
- ☐ VIOLET

DOWN

1. A plant of the daisy family that has bright rayed flowers, typically of purple or pink.
3. A tall Eurasian plant of the mallow family, widely cultivated for its large showy flowers.
4. A lily that bears large yellow, red, or orange flowers, each flower lasting only one day.
6. A bulbous spring-flowering plant of the lily family, with boldly colored cup-shaped flowers.
7. A herbaceous plant or small shrub of a genus that comprises the cranesbills and their relatives.
8. A plant of the daisy family, typically with yellow, orange, or copper-brown flowers, that is widely cultivated as an ornamental.
9. A climbing plant of the pea family, widely cultivated for its colorful fragrant flowers.
11. A plant with complex flowers that are often showy or bizarrely shaped, having a large specialized lip and frequently a spur.

ACROSS

2. A small grassland plant that has flowers with a yellow disk and white rays.
5. A commonly cultivated plant of European woodlands that produces pale yellow flowers in the early spring.
10. A tall Eurasian plant with erect spikes of flowers, typically pinkish-purple or white, shaped like the fingers of gloves.
12. A bulbous plant that typically bears bright yellow flowers with a long trumpet-shaped center
13. A herbaceous or shrubby plant of north temperate regions, which has long been cultivated for its showy flowers.
14. A herbaceous plant of temperate regions, typically having purple, blue, or white five-petaled flowers, one of which forms a landing pad for pollinating insects.
15. A popular cultivated viola with flowers in rich colors, with both summer- and winter flowering varieties.
16. A tree or shrub of the bedstraw family, with large fragrant white or yellow flowers.

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 9, 2021 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 Darlene Lauck who had the correct phrase of "NOTHING BURNS LIKE THE COLD" for January 2021.

GROUND WATER & SURFACE WATER INTERACTION STUDY

Many of the public water suppliers serving residents of the Big Sioux River basin draw water from the Big Sioux Aquifer. The aquifer is composed of sands and gravels deposited by glacial meltwaters during the last ice age, in the same valley now occupied by the river. Because of their close proximity, the river and the aquifer are interconnected, and water is known to move from the river to the aquifer, or the aquifer to the river.

To better understand this interaction, the Geological Survey Program of the SD Department of Environment & Natural Resources has initiated a detailed investigation of just how this movement of surface water (river) and ground water (aquifer). They are looking at this phenomena at two well fields located in the aquifer in close proximity to the river: the Clark Rural Water System well field north of Watertown, and the Big Sioux Community Water System well field at Egan. At each location, production wells are located close enough to the river that they might induce flow under intense pumping.

The study will involve collecting and comparing the chemistry and physical properties of water from the river and the adjacent aquifer. The intent is to identify parameters that are distinct to each source, defining what would be uniquely river water versus ground water. Then they will look at the characteristics of the water in between the river and the production wells, and determine if there is evidence of induced recharge, i.e., river water being 'pulled into' the aquifer. Detailed water level measurements will also be taken to monitor the direction of ground water flow in the well fields.

Initial field work began last fall, with the installation of dedicated observation wells at each location, as well as rehabilitation of wells already in the area. Staff from the SD Association of Rural Water Systems assisted by surveying the locations (latitude/longitude) and elevation of many of the wells at the Egan well field. The East Dakota Water Development District is providing support for the acquisition of dedicated data collection equipment to monitor water temperature and levels in the observation wells and the river. Water quality sampling is expected to begin this spring.

TM Rural Water District
Annual Water Quality Report
January 1, 2020 - December 31, 2020

Water Quality
Last year, the TM Rural Water District monitored your drinking water for possible contaminants. This brochure is a snapshot of the quality of the water that we provided last year. Included are details about where your water comes from, what it contains, and how it compares to Environmental Protection Agency (EPA) and state standards. We are committed to providing you with information because informed customers are our best allies.

TM Rural Water District is committed to providing our customers with safe reliable drinking water.

Water Source
We serve more than 1,600 rural residences and provide wholesale water to the communities of Canistota, Hurley, Marion and Viborg in addition to supplying treated water to an ethanol plant located NW of Marion, SD an average of 1,610,000 gallons of water per day. Our water is groundwater that we produce from local wells.

TM currently has two different sources of ground water that we treat and distribute to our customers.

The Dolton Aquifer, named after and located in the area of Dolton, South Dakota. It is the original aquifer that supplied the source of water for TM and provides a portion of the water used by our customers today.

The Upper Vermillion Missouri Aquifer otherwise known as the Basal Aquifer is the other source of ground water currently utilized by the District and is the larger of the two aquifers. The UVM Aquifer in some places is actually below the Dolton Aquifer.

Finished water is finally blended with a small amount of finished water supplied by BY Water User District and Lewis & Clark Regional Water System.

The state has performed an assessment of our source water and they have determined that the relative susceptibility rating for the TM Rural Water District public water supply system is low.

For more information about your water and information on opportunities to participate in public meetings, call the TM Office at 605-297-3334.

Additional Information
The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. 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.

Contaminants that may be present in source water include:
Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.

Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.

Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

Water Treatment
The water treatment plant located just to the east of Dolton, South Dakota is where TM brings in the raw water from the Dolton and UVM aquifers.

The water treatment plant utilizes conventional lime softening treatment where raw water is mixed with a lime slurry which then reacts with the calcium and manganese in the water. The calcium, manganese and other solids bond to the lime and settle to the bottom leaving only clarified water that continues onto the next stage of the treatment process.

Carbon Dioxide is then added to the water to further soften the water before it is sent to the filtration process which filters the water through 18 inches of anthracite coal and 12 inches of fine sand where any remaining suspended matter is removed from the water.

Chlorine is then added to the water at the rate of approximately 3.5 parts per million. Chlorine is added in order to kill any bacteria that the water may come in contact with during its travel through the distribution system. The water then flows to the underground storage units under our plant where the chlorine is thoroughly mixed before being sent out into the distribution system.

Water Distribution
The TM water distribution system is comprised of eight high service pumps, three booster stations, four water towers, and approximately 900 miles of water lines. Water is distributed to customers in six different serving areas in the District. Service areas are created when water is pumped or gravity fed from one service area to another and are typically categorized as having different hydraulic gradients associated with them.

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

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 microbial contaminants can be obtained by calling the Environment Protection Agency's Safe Drinking Water Hotline at 800-426-4791.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The TM Rural Water District public water supply system is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.

Detected Contaminants

The tables shown on page 15 list all the drinking water contaminants that we detected during the 2020 calendar year. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in this table is from testing done January 1 – December 31, 2020. The state requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, is more than one year old.

Questions?

TM Rural Water District firmly believes that it is important that our users read and fully understand this yearly report. We would encourage anyone that has any questions or concerns to contact the TM Rural Water District Office during normal business hours at 605-297-3334.

2020 TABLE OF DETECTED CONTAMINANTS FOR TM RURAL WATER DISTRICT *(EPA ID 0999)*

Substance	90% Level	Test Sites > Action Level	Date Tested	Highest Level Allowed (AL)	Ideal Goal	Units	Major Source of Contaminant
Copper	0.1	0	07/17/19	AL=1.3	0	ppm	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives.
Lead	1	0	07/17/19	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
Fluoride	0.56		11/04/20	4	<4	ppm	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
Haloacetic Acids (RAA) *	12.2		09/16/20	60	0	ppb	By-product of drinking water chlorination. Results are reported as a running annual average of test results.
Haloacetic Acids (RAA) **	26.05		11/17/20	60	0	ppb	By-product of drinking water chlorination. Results are reported as a running annual average of test results
Haloacetic Acids (RAA)	14.7		09/21/20	60	0	ppb	By-product of drinking water chlorination. Results are reported as a running annual average of test results.
Nitrate (as Nitrogen) Nitrate (as Nitrogen) *	0.5 0.6		04/07/20 09/15/20	10	10	ppm	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
Total trihalomethanes (RAA) *	45.7		09/16/20	80	0	ppb	By-product of drinking water chlorination. Results are reported as a running annual average of test results.
Total trihalomethanes (RAA) **	52.95		11/17/20	80	0	ppb	By-product of drinking water chlorination. Results are reported as a running annual average of test results.
Total trihalomethanes (RAA)	29.9		09/21/20	80	0	ppb	By-product of drinking water chlorination. Results are reported as a running annual average of test results.

Please direct questions regarding this information to Mr. Jay Jorgensen with the TM Rural Water District public water system at 605-297-3334.

Definition of Terms

These definitions are provided in order for you to better understand the results of the testing shown above.

Parts per million (ppm) or Milligrams per liter (mg/l) – one part per million corresponds to one minute in two years or a single penny in $10,000.

Parts per billion (ppb) or Micrograms per liter (ug/l) – one part per billion corresponds to one minute in 2,000 years, or a single penny in $10,000,000.

Picocuries per liter (pCi/l) – a measure of radioactivity.

Action Level (AL) – The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Maximum Contaminant Level (MCL) – The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology. MCL's are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one in a million chance of having the described health effect.

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

Nephelometric Turbidity Unit (NTU) – is the cloudiness or haziness of a fluid caused by individual particles (suspended solids) that are generally invisible to the naked eye, similar to smoke in air. The measurement of turbidity is a key test of water quality.

Summary of 2020 Detected Contaminants in TM's Water

Antimony – occurs as a result of discharge from petroleum refineries; fire retardants; ceramics; electronics; and solder. The levels detected are well below those allowed by the EPA.

Arsenic – occurs as the result of natural deposits or from runoff from orchards. The levels detected are well below those allowed by the EPA.

Barium – occurs as a result of erosion of natural deposits. The levels detected are well below those allowed by the EPA.

Chromium – occurs as a result of erosion of natural deposits. The levels detected are well below those allowed by the EPA.

Fluoride – is added to our water to promote healthy teeth. The optimum Fluoride level in water is 1.2 ppm.

Haloacetic Acids – By-Product of drinking water chlorination. Results are reported as a running annual average of test results. The levels detected are well below those allowed by the EPA.

Selenium – a naturally occurring substance found in the soil and rocks of this region. The levels detected in 2020 are well below those allowed by the EPA.

Nitrite (as Nitrogen) – can come from runoff from fertilizer use; leaching from septic tanks or erosion of natural deposits. Levels detected in 2020 are well below those allowed by the EPA.

Lead and Copper – Levels are normally a function of home plumbing fixtures. Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels in your home may be higher than at other homes throughout the system as a result of the materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may want to have your water tested. Additional information is available from the Safe Drinking Water Hotline at 1-800-426-4791.

TM Rural Water District
Box 445
Parker, SD 57053

www.tmruralwater.com
605-297-3334

WATER MATTERS

Aquifers 101

For most South Dakotans, the water that comes out of your tap started out in the ground. This 'ground water' has been drawn from geologic materials referred to as aquifers. As such, the importance of aquifers to all of us can not be exaggerated, but just what are they exactly?

What is an Aquifer?

An aquifer is a body of saturated rock from which water can be extracted in useful quantities. Aquifers must be both porous (have lots of open spaces in which water can be held) and permeable (able to let water move easily through it). In South Dakota, most aquifers consist of unconsolidated sand and gravel found along the courses of current, or former, rivers and streams. In certain areas, aquifers are made up of layers of sandstone or fractured limestone. Rocks such as granite and quartzite are generally poor aquifers because they have a very low porosity. However, if these rocks are highly fractured, they make very good aquifers.

How Does Water Get In An Aquifer?

Aquifers fill with water that soaks into the ground, having started out as rainfall, runoff or melting snow . The amount of water in storage in the aquifer can vary from season to season and year to year. Ground water may flow through an aquifer at a rate of 50 feet per year or 50 inches per century, depending on the permeability. But no matter how fast or slow, water will eventually discharge or leave an aquifer and must be replaced by new water to replenish or recharge the aquifer.

How Do We Get Water Out of an Aquifer?

Holes are drilled into the material that makes up the aquifer and a well is installed. Normally such water must be pumped to the surface, but in some cases the water will actually rise to the surface naturally (artesian aquifers). When water is pumped from a well, the water table (the top of the saturated part of the aquifer) is generally lowered around the well. Hydrologists call this a cone of depression. If water is pumped from a well faster than it is replenished, the water table is lowered and the well may go dry.

TRY THIS AT HOME:

Take a clear glass jar and fill it with gravel. Now pour water slowly into the jar. Watch as the water fills in the spaces between the bits of gravel. A jar "full" of gravel can actually hold quite a bit of water. You have created an aquifer!

Back page content provided by:
East Dakota Water Development District
132B Airport Drive • Brookings, SD, 57006
(605) 688-6741 • http://eastdakota.org