2016

ANNUAL DRINKING WATER QUALITY REPORT

ALL SEASONS WATER USERS DISTRICT

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We're pleased to present to you this year's ***Annual Drinking Water Quality Report.*** This report is designed to inform you about the safe, clean water we deliver to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water.

All Seasons Water Users District water sources are:

- For System I, our water source is two wells that are located west of Bottineau in an undifferentiated glacial drift aquifer. The water is pumped from the wells to an iron and manganese removal treatment plant located northwest of Bottineau. Polyphosphates are added to reduce lead and copper levels in the private homes, chlorine is then added for disinfection.
- For System III, we purchase our water from NAWS (Northwest Area Water Supply), which currently purchases the water from the City of Minot. The water is treated groundwater taken from wells consisting of two sources: the Sundre Aquifer and the Minot Aquifer. The processing of the water from Minot's water treatment plant is accomplished by a lime softening and filtering process.
- For System IV, our water source is five wells in the Shell Valley aquifer. The water is pumped from the wells to an iron and manganese removal treatment plant located north of Rolette. Phosphates and polyphosphates are added to reduce lead and copper levels in private homes; chlorine is then added for disinfection.
- For System V, we purchase our water from the City of Rugby, which is treated groundwater taken from wells in the Pleasant Lake Aquifer, located approximately eight miles east of the City of Rugby and the Rugby Aquifer, located approximately four miles east of the City of Rugby, and is delivered through a pipeline to the Rugby Water Treatment Plant located at 211 – 4th Avenue NW. The processing of the water from the water treatment plant is accomplished by a lime softening and filtering process that treats 1,250 gallons a minute.

  The City of Rugby has instituted a well head protection plan for the area around the Pleasant Lake Aquifer well site, within the limitations of the law and property rights. The City of Rugby has 8 wells. These wells are located outside the jurisdictional limits of the city and cannot be protected in the same manner as if they were located within the city limits.

  The areas surrounding the well sites are farming interests. Landowners that surround the well sites have been contacted in an effort to reduce the possibilities of contamination of the ground water aquifers. Further efforts to help alleviate the threats to groundwater contamination are continuing, by meeting with these people and helping, when possible, with problems that may appear.

  Land that the City of Rugby does control surrounding the wells is fenced and access is controlled by locked gates fow which only city employees have keys. The well houses have locks that are secured at all times. Oil, gas, and other fuel leaks are prevented by periodic checks and the restricted access to the grounds. Chemical spraying of the area is not allowed because of the ongoing testing of biological control measures.

All Seasons Water Users is participating in the North Dakota Wellhead Protection Program. The North Dakota Department of Health has completed a source water assessment for All Seasons Water Users and has determined that based on the information from delineation of wellhead protection areas and potential contaminant/land use inventories, our water source has been determined to be not likely susceptible to potential contaminants. Information on these programs is available to the public at the All Seasons Water Users District office.

Dan Schaefer, manager of All Seasons Water Users, is pleased to report that our drinking water is safe and meets federal and state requirements.

This report shows our water quality and what it means.

If you have any questions about this report or concerning your water utility, please contact Dan Schaefer at 701-228-3663. We want our valued customers to be informed about their water utility. If you want to learn more, please attend any of our regularly scheduled meetings. They are held on the second Monday of the month, 7:30 p.m., at the All Seasons Water office on Highway 5, west of Bottineau. If you are aware of non-English speaking individuals who need help with the appropriate language translation, please call Dan Schaefer at the number listed above.

All Seasons Water Users would appreciate it if large volume water customers post copies of this ***Annual Drinking Water Quality Report*** in conspicuous locations or distribute them to tenants, residents, patients, students, and/or employees, so individuals who consume the water, but do not receive a water bill can learn about our water system.

All Seasons Water Users routinely monitors for contaminants in your drinking water according to Federal and State laws. The following tables show the results of our monitoring for the period of Jan. 1 to Dec. 31, 2016. As authorized and approved by EPA, the state has reduced monitoring requirements for certain contaminants to less often than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of our data [e.g., for inorganic contaminants], though representative, is more than one year old.

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, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. A copy of the Source Water Assessment Report is available for review in the office of All Seasons Water Users District.

CONTAMINANTS THAT MAY BE PRESENT IN SOURCE WATER:

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 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.

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

In the following tables, you will find many terms and abbreviations with which you might not be familiar. To help you better understand these terms, we've provided the following definitions:

(MCLG) Maximum Contaminant Level Goal: 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.

(MCL) Maximum Contaminant Level: 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.

(MRDLG) Maximum Residual Disinfectant Level Goal: The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

(MRDL) Maximum Residual Disinfectant Level: The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Highest Compliance Level: The highest level of that contaminant used to determine compliance with a National Primacy Drinking Water Regulation.

Range of Detections: The lowest to the highest result value recorded during the required monitoring timeframe for systems with multiple entry points.

Abbreviations: ppb – parts per billion or micrograms per liter; ***ppm*** – parts per million or milligrams per liter; ***ppt*** – parts per trillion or nanograms per liter; ***ppq*** – parts per quadrillion or picograms per liter; ***N/A*** – not applicable; ***ND*** – none detected; ***pCi/L*** – picocuries per liter (a measure of radioactivity), ***umho/cm*** – micromhos per centimeter (a measure of conductivity); ***obsvns*** – observations/field at 100 Power; ***IDSE*** – Initial Distribution System Evaluation.

2016 TEST RESULTS - SYSTEM I

Contaminant	Violation Yes/No	Highest Compliance Level	Range	Date (Year)	Unit Measurement	MCLG	MCL	Likely Source of Contamination
Inorganic Contaminants								
1. Copper	No	0.943 90th%	N/A	2015	ppm	1.3	AL=1.3	Corrosion of household plumbing systems, erosion of natural deposits, leaching from wood preservatives
2. Lead	No	2.36 90th%	N/A	2015	ppb	15	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
3. Nitrate-Nitrite	No	ND	N/A	2015	ppm	10	10	
Disinfection By-products								
4. Haloacetic Acids (HAA5)	No	1	N/A	2016	ppb		60	By-product of drinking water disinfection
5. Trihalomethanes (TTHM)	No	78	N/A	2016	ppb		80	By-product of drinking water disinfection
Disinfectants								
6. Chloramine		0.8	0.31 to 1.96	2016	ppm	MRDLG =4	MRDL =4	Water additive used to control microbes

2016 TEST RESULTS - SYSTEM III

Contaminant	Violation Yes/No	Highest Compliance Level	Range	Date (Year)	Unit Measurement	MCLG	MCL	Likely Source of Contamination
Inorganic Contaminants								
1. Arsenic	No	1.74	N/A	2016	ppb	0	10	Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer
2. Barium	No	0.00433	N/A	2016	ppm	2	2	Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure
3. Copper	No	0.0249 90th%	N/A	2015	ppm	1.3	AL=1.3	Corrosion of household plumbing systems, erosion of natural deposits, leaching from wood preservatives
4. Flouride	No	0.72	N/A	2016	ppm	4	4	Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Flouride in drinking water at half the MCL or more may cause mottling of children's teeth, usually in children less than nine years old. Mottling, also known as dental fluorosis, may include brown staining and/or pitting of the teeth, and occurs only in developing teeth before they erupt from the gums
5. Lead	No	2.55 90th%	N/A	2015	ppb	15	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
6. Nitrate-Nitrite	No	0.18	N/A	2016	ppm	10	10	Runoff from fertilizer use, leaching from septic tanks, sewage, erosion of natural deposits
7. Selenium	No	1.65	N/A	2016	ppb	50	50	Selenium is an essential nutrient. However, some people who drink water containing selenium in excess of MCL over many years could experience hair or fingernail losses, numbness in fingers or toes, or problems with their circulation

2016 TEST RESULTS - SYSTEM III (CONT.)

Contaminant	Violation Yes/No	Highest Compliance Level	Range	Date (Year)	Unit Measurement	MCLG	MCL	Likely Source of Contamination
Disinfectants								
8. Chloramine	No	2.0	1.25 to 2.00	2016	ppm	MRDLG =4	MRDL =4	Water additive used to control microbes
Unregulated Contaminants								
9. Alkalinity, carbonate	No	10	N/A	2016	ppm			
10. Alkalinity, total	No	120	N/A	2016	ppm			
11. Bicarbonate as HCO3	No	126	N/A	2016	ppm			
12. Calcium	No	15.2	N/A	2016	ppm			
13. Chloride	No	62.1	N/A	2016	ppm			
14. Conductivity	No	1260	N/A	2016	umho/cm			
15. Hardness, total (as CaCO3)	No	115	N/A	2016	ppm			
16. Magnesium	No	18.7	N/A	2016	ppm			
17. pH	No	8.88	N/A	2016	ppm			
18. Potassium	No	6.1	N/A	2016	ppm			
19. Sodium	No	218	N/A	2016	ppm			
20. Sodium Adsorption Ratio	No	8.84	N/A	2016	obsvns			
21. TDS	No	778	N/A	2016	ppm			
22. Zinc	No	0.00105	N/A	2016	ppm			
Disinfection By-products								
23. Haloacetic Acids (HAA5)	No	10	9.47 to 9.54	2016	ppb		60	Water additive used to control microbes
24. Trihalomethanes (TTHM)	No	26	24.73 to 26.12	2016	ppb		80	Water additive used to control microbes

2016 TEST RESULTS - SYSTEM IV

Contaminant	Violation Yes/No	Highest Compliance Level	Range	Date (Year)	Unit Measurement	MCLG	MCL	Likely Source of Contamination
Disinfectants								
1. Chlorine	No	1.1	0.6 to 1.6	2016	ppm	4	4	By-product of drinking water disinfection
Inorganic Contaminants								
2. Arsenic	No	1.39	N/A	2016	ppb	0	10	Erosion of natural deposits, runoff from orchards, runoff from glass and electronics production wastes
3. Copper	No*	1.25 90th%	N/A	2015	ppm		AL=1.3	Corrosion of household plumbing systems, erosion of natural deposits, leaching from wood preservatives
4. Lead	No**	2.51 90th%	N/A	2015	ppb		AL=15	Corrosion of household plumbing systems, erosion of natural deposits
5. Nitrate-Nitrite	No	1.43	N/A	2016	ppm	10	10	Runoff from fertilizer use, leaching from septic tanks, sewage, erosion of natural deposits
Stage 2 Disinfection By-products (TTHM/HAA5)								
6. Haloacetic Acids (HAA5)	No	7	N/A	2016	pCi/L		60	By-product of drinking water disinfection
7. Trihalomethanes (TTHM)	No	19	N/A	2016	pCi/L		80	By-product of drinking water disinfection
Radioactive Contaminants								
8. Gross Alpha, including RA, excluding RN & U	No	0.61	N/A	2015	pCi/L	15	15	Erosion of natural deposits
9. Radium, combined (226, 228)	No	0.92	N/A	2015	pCi/L		5	Erosion of natural deposits
10. Uranium, combined	No	4.55	N/A	2015	ppb		30	Erosion of natural deposits

*No sites exceeded the copper action level in 2015.
**No sites exceeded the lead action level in 2015.

2016 TEST RESULTS - SYSTEM V

Contaminant	Violation Yes/No	Highest Compliance Level	Range	Date (Year)	Unit Measurement	MCLG	MCL	Likely Source of Contamination
Inorganic Contaminants								
1. Arsenic	No	3.46		2016	ppm			Erosion of natural deposits, runoff from orchards, runoff from glass and electronics production wastes
2. Copper	No*	0.243 90th%	N/A	2014	ppm		AL=1.3	Corrosion of household plumbing systems, erosion of natural deposits, leaching from wood preservatives
3. Lead	No**	ND 90th%	N/A	2014	ppb		AL=15	Corrosion of household plumbing systems, erosion of natural deposits
4. Nitrate-Nitrite	No	0.11	N/A	2016	ppm	10	10	Runoff from fertilizer use, leaching from septic tanks, sewage, erosion of natural deposits
Disinfection By-products								
4. Haloacetic Acids (HAA5)	No	16	N/A	2016	ppb		60	By-product of drinking water disinfection
5. Trihalomethanes (TTHM)	No	47	N/A	2016	ppb		80	By-product of drinking water disinfection
Disinfectants								
6. Chlorine	No	1.1	0.8 to 1.4	2016	ppm	MRDLG =4	MRDL =4.0	Water additive used to control microbes

*No sites exceeded the copper action level in 2014.
**No sites exceeded the lead action level in 2014.

EPA requires monitoring of over 80 drinking water contaminants. Those contaminants listed in the previous tables are the only contaminants detected in your drinking water.

Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted.

Your water system monitors for a number of unregulated organic contaminants, which could indicate a contamination of the water supply from a pesticide or petroleum spill or leak.

As you can see by the tables, our systems had no violations. We're proud that your drinking water meets or exceeds all federal and state requirements. We have learned through our monitoring and testing that some contaminants have been detected. The EPA has determined that your water IS SAFE at these levels.

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 the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (800-426-4791).

MCLs are set at very stringent levels. To understand the possible health effects described for many regulated contaminants, a person would have to drink two 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.

Thank you for allowing us to provide your family with clean, quality water this year. We have done recent system improvements so we can maintain a safe and dependable water supply to all of our customers.

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/Centers for Disease Control and Prevention (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).

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. All Seasons Water Users District is responsible for providing high-quality drinking water, but cannot control the variety of materials used in plumbing components. Use water from the cold tap for drinking and cooking. 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 two minutes before using water for drinking or cooking. If you are concerned about lead in your drinking 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.*

Please call our office at 701-228-3663 or 888-647-4330, if you have questions. All Seasons Water Users District works diligently around the clock to provide top-quality water to every tap. We ask that all our customers help us protect our water sources, which are the heart of our system, our way of life, and our children's futures.

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USDA, RURAL DEVELOPMENT

Quality On Tap!

Our Commitment Our Profession