The City of Fargo

2018 Water Quality Report

The City of Fargo Water Treatment Plant is issuing this report to inform customers about the quality of water produced and distributed in 2018.

If you are a large-volume user, please distribute a copy of this Water Quality Report to consumers who do not receive a bill.

If you have questions about Fargo drinking water, or if you are aware of non-English speaking individuals who need help with the appropriate language translation, please contact the Water Treatment Plant at 701.241.1469

If you would like opportunities for public participation in decisions that affect water quality, please attend City Commission meetings, which are held every other Monday at 5 p.m. You can check the city's web site for exact meeting dates at:

www.fargond.gov/city-government/departments/city-commission

Please observe Fargo's odd/even lawn watering schedule from Memorial Day to Labor Day to help reduce our peak demand.

The primary water source for the Fargo WTP is the Red River. A water intake is located in proximity to the Midtown Dam. The city also has alternate sources of water including the Sheyenne River and Lake Ashtabula. This includes an intake and pumping station on the Sheyenne River south of West Fargo. The Sheyenne River is used approximately 30% of the time, either alone or blended with the Red River.

Our public water system, in cooperation with the North Dakota Department of Health, has completed the delineation and contaminant/land use inventory elements of the North Dakota Source Water Protection Program. Based on the information from these elements, the North Dakota Department of Health has determined that our source water is moderately susceptible to potential contaminants.

You may learn more about the North Dakota Source Water Protection Program online at:

https://deq.nd.gov/WQ/1_Groundwater/1_SW.aspx

Troy B. Hall
Water Utility Director

Brian Ward
WTP Superintendent

Fargo Water Treatment Plant
701-241-1469

2018

-Aesthetic Water Quality-

Hardness- 7 grains/gal Iron– Less than 0.02mg/l Manganese- Less than 0.02mg/l PH– 9

What You Need to Know About Drinking Water Regulations

The sources of drinking water (both tap 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.

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. Food and Drug Administration (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 EPA's Safe Drinking Water Hotline at 800.426.4791

Before the City of Fargo can deliver water to your home, it must first be thoroughly tested in certified laboratories. Fargo water was tested for nearly 100 different contaminants. Only those detected are listed in the Monitoring Results Table.

The North Dakota Department of Health 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, while representative of the water quality, is more than one year old.

The highest level of a substance allowed in drinking water is the Maximum Contaminant Level (MCL), which is set by the EPA.

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 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-occuring or be the result of oil and gas production and mining activities.

Lead and Copper

The MCL for lead and copper is known as the Action Level (AL). This is the concentration which, if exceeded, triggers treatment or other requirements a water system must follow. Ninety percent of all samples tested must be below this concentration. During 2017, no samples from the Fargo system tested above the action level for lead or copper.

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 City of Fargo 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 2 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

Unregulated Contaminants -table 1

Substance *(units) test date*	Level Detected	Range
Alkalinity- source *(ppm) 2/28/2018, 10/10/2018*	source=286 finished=117	200-286 49-117
Bicarbonate as HCO_3 *(ppm) 4/17/2018*	125	N/A
Bromide-Red River Intake *(ppb)*	46	40.3-55.8
Bromide-Sheyenne Intake *(ppb)*	239	127-343
Bromide-Finished Water *(ppm) 12/10/2018*	0.062	0.029-0.062
Calcium *(ppm) 4/17/2018*	40.3	N/A
Chloride *(ppm) 4/17/2018*	27.4	N/A
Conductivity@ 25 C UMHOS/CM *umho/cm 4/17/2018*	616	N/A
Hardness (as $CACO_3$) *(ppm) 4/17/2018*	146	N/A
Magnesium *(ppm) 4/17/2018*	10.9	N/A
Nickel *(ppm) 4/17/2018*	0.00399	N/A
pH *(pH) 10/10/2018*	9.6	8.29-9.6
Potassium *(ppm) 4/17/2018*	8.9	N/A
Sodium *(ppm) 4/17/2018*	63.5	N/A
Sodium Adsorption Ratio *(obsvns) 4/17/2018*	2.29	N/A
Sulfate *(ppm) 4/17/2018*	155	132-155
TDS *(ppm) 4/17/2018*	370	N/A
Total Organic Carbon-Red River Intake *(ppb)*	9,230	7,440-12,200
Total Organic Carbon-Sheyenne Intake *(ppb)*	8,700	8,100-9,060
Total Organic Carbon *(ppm) 2/28/2018, 4/30/2018*	source=10.9 finished=8.11	6.32-10.9 2.02-8.11
Zinc *(ppm) 4/17/2018*	0.00569	N/A

Key to the Table

MCLG: Maximum Contaminant Level Goal. 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.

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

Level Detected: The highest level of that contaminant used to determine compliance with a National Primacy Drinking Water Regulation. This can be the highest amount found in the water, or the average of all samples analyzed, depending on the regulation.

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

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.

AL: Action Level.
N/A: Does not apply.
ND: None detected.
pCi/L: picocuries per liter (a measure of radioactivity.)
ppb: parts per billion.
ppm: parts per million.

Unregulated Contaminants

The City of Fargo was selected by the EPA to sample for 22 unregulated contaminants during 2018. Samples were taken three times from the Red River and Sheyenne River intake stations, the Treatment Plant finished water, and the Maximum Residence Time sampling points in our distribution system.

Unregulated contaminants are those for which the EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist the EPA in determining the occurence of unregulated contaminants in drinking water and whether future regulation is warranted. Should you have any questions, please contact our office (701) 241-1469.

The contaminants listed in the Unregulated Contaminants tables were the only contaminants detected during this sampling. Results are from the Red River and Sheyenne River intake stations, and within our distribution system.

Bromate

The City of Fargo annual average for Bromate exceeded the EPA limits in drinking water for the first quarter of 2018. Bromate is a byproduct of drinking water disinfection. Some people who drink water containing bromate in excess of the MCL over many years may have increased risk of getting cancer. The City of Fargo is committed to reducing the bromate levels in our drinking water. Sampling results from 2018 showed levels substantially lower than MCL.

Regulated Contaminants

	Substance (monitored at plant) *(units) test date*	MCL	MCLG	Level Detected	Range	Major Source of Contaminant
Inorganic	Barium *(ppm) 4/17/2018*	2	2	0.0376	N/A	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Inorganic	Fluoride *(ppm) 4/17/2018*	4	4	0.625	N/A	Erosion of natural deposits; Water additive to promote strong teeth; Discharge from fertilizer and aluminum factories.
Inorganic	Nitrate-Nitrite *(ppm) 5/15/2017*	10	10	0.09	N/A	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
Radioactive	Gross Alpha* *(pCi/l) 7/17/2018*	15	15	2.44	N/A	Erosion of natural deposits.
Radioactive	Combined Radium (226, 228) *(pCi/l) 7/17/2018*	5	N/A	0.166	N/A	Erosion of natural deposits.
Disinfectants & Byproducts	Bromate *(ppb) 2/28/2018*	10	N/A	12	ND-3.9	By-product of drinking water disinfection.
Disinfectants & Byproducts	Chloramine *(ppm) 12/31/2018*	4 (MRDL)	4 (MRDLG)	3.3	2.99-3.49	Water additive used to control microbes.
Disinfectants & Byproducts	Haloacetic Acids *(ppb) 6/30/2018*	60	N/A	25	2.41-26.16	By-product of drinking water disinfection.
Disinfectants & Byproducts	Total Trihalomethanes *(ppb) 6/30/2018*	80	N/A	19	0.74-14.98	By-product of drinking water disinfection.
	Substance (monitored at tap) *(units) test date*	**AL**	**MCLG**	**90% Level**	**Sites Over AL**	**Major Source of Contaminant**
	Copper *(ppm) 9/8/2017*	1.3	1.3	0.112	0 of 50 sites	Corrosion of household plumbing systems; erosion of natural deposits.
	Lead *(ppb) 9/8/2017*	15	0	3	0 of 50 sites	Corrosion of household plumbing systems; erosion of natural deposits.

*including RA, excluding RN & U

STAGE 2	Site 1	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8
Substance *(units)*	Avg Level *range*	Avg Level *range*	Avg Level *range*	Avg Level *range*	Avg Level *range*	Avg Level *range*	Avg Level *range*	Avg Level *range*
HAA5 *(ppb)*	13.08 *10.85-17.34*	15.17 *11.17-18.51*	16.45 *14.13-20.56*	19.31 *13.48-23.83*	19.56 *13.06-26.32*	12.90 *9.82-17.38*	18.41 *13.53-21.51*	17.75 *11.73-22.02*
HAA6Br *(ppb)*	1.37 *0.54-2.29*	1.55 *0.61-2.5*	1.62 *0.65-2.71*	1.44 *0.8-1.94*	1.51 *1.26-1.72*	1.1 *0.58-1.38*	1.75 *0.79-2.75*	1.52 *0.98-1.91*
HAA9 *(ppb)*	14.23 *11.39-18.63*	16.51 *11.78-20.04*	17.82 *15.29-22.05*	20.75 *14.28-25.77*	21.07 *14.32-27.87*	14 *10.4-18.76*	20 *14.32-23.23*	19.27 *12.71-23.93*

Unregulated Contaminants -table 2

Water Treatment Plant Expansion

The City of Fargo Water Treatment Plant (WTP) has completed an exciting expansion project. The WTP expansion became fully operational in the spring of 2019. The new addition will increase our maximum treatment capacity and equip us with new treatment technologies to keep our water quality excellent. The WTP expansion required nearly a decade to complete from initial project planning through construction, including research, small-scale pilot testing, design, and over three years of construction.

The WTP expansion added a parallel treatment approach with a treatment capacity of 15 MGD, which extends our maximum treatment volume to 45 MGD and adds new tools to our arsenal. The new portion of the WTP employs membrane treatment technology, which affords the ability to remove certain substances (such as sulfate and bromide) that conventional treatment does not address. Since 1997, the Fargo WTP has utilized a state-of-the-art plant with more conventional treatment processes. The 1997 WTP will be almost continuously utilized and is well designed to work in harmony with the expansion project.

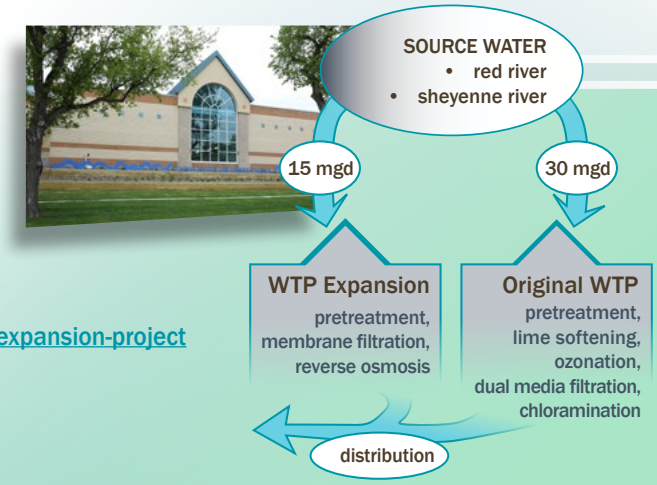
The two water treatment systems serve side-by-side, affording the needed flexibility to strategically manage our treatment approach and to best address degrading source water quality, meet the needs of increasing population and water demand, and thoughtfully manage cost considerations.

For more information about the project, visit our website:

www.fargond.gov/city-government/departments/water-treatment/expansion-project

Turbidity is a measure of water clarity monitored at the Fargo Water Treatment Plant. Various treatment techniques (TT) are applied to reduce levels of turbidity in drinking water. Regulations require turbidity to be <0.3 NTU 95% of the time and <1.0 NTU 100% of the time. During 2018 the Fargo Water Treatment Plant met or exceeded these requirements 100% of the time. The highest single turbidity measurement was 0.31 NTU. Turbidity has no health effects, but it's presence in drinking water can interfere with disinfection and provide a medium for microbial growth.

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 microbial contaminants are available from the Safe Drinking Water Hotline 800.426.4791



PFAS Compounds-Not Detected in Fargo Drinking Water

An emerging national topic in drinking water are PFAS (Polyfluoroalkyl Substances) compounds. These substances are used in commercial products such as non-stick cookware and fire retardants. PFAS compounds have not been found in Fargo drinking water and are more typically associated with well water contamination. In 2013, Fargo drinking water was tested on four different occasions for PFAS compounds per EPA requirements. None of the samples analyzed showed any trace of these contaminants.

Soil contamination has occurred at Fargo's Air National Guard Base due to the use of PFAS compounds in fire fighting agents. This contamination has put Fargo on a national map related to PFAS contamination. Since the Fargo Air National Guard Base is north of the Fargo Water Treatment Plant (WTP) intakes and the WTP does not use ground water, there is no potential of this PFAS soil contamination entering the Fargo drinking water supply.

We are also not aware of any chemical manufacturing facilities upstream of the WTP intakes as a source of other potential PFAS contamination. PFAS compounds are unlikely to be a concern for Fargo drinking water contamination because there is no obvious pathway for contamination to occur. Past EPA-required testing in 2013 supports this idea. There are potential health risks associated with PFAS compounds in drinking water or food items and research is ongoing.