# Bismarck

# 2023 Annual Report on the Quality of Tap Water

## 2023 Tap Water Profile

| | |
|---|---|
| Average Total Hardness | 132 mg/l or 7.72 grains/gallon |
| Average Total Alkalinity | 61 mg/l |
| Average pH | 9.17 |
| Average Fluoride | 0.77 mg/l |
| Average Daily Water Production | 9.36 million gallons |
| Average Winter Month Water Production | 200 million gallons |
| Average Summer Month Water Production | 504.723 million gallons |

The City of Bismarck's drinking water continued to meet all EPA and State Standards of quality and safety in 2023.

This report is part of maintaining our compliance with the Environmental Protection Agency's guidelines to provide information on tap water produced by the Bismarck Water Treatment Facility and provides you with specific test results to show the quality of Bismarck's water and compares those results to EPA standards for drinking water. There is also some general information about health and sources of contamination. We hope you find this information to be useful.

# Bismarck's Water Source

The Bismarck Water Treatment Facility takes its water from a horizontal collector well adjacent to the Missouri River south of the Memorial Bridge. This collector well draws water from a depth of 80 feet in an aquifer that is directly recharged from the Missouri River. The direct river intake upstream of the Memorial Bridge serves as a backup to the collector well intake. Our public water system, in cooperation with the ND Department of Environmental Quality, has completed the delineation and contaminant/land use inventory elements of the ND Source Water Protection Program. Based on the information from these elements, the ND Department of Environmental Quality has determined that our source water is moderately susceptible to potential contaminants. A copy of this report is available by contacting the Utility Billing Department at (701) 355-1700 Option 1.

# Sources of Contamination

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.

**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 occurring or be the result of oil and gas production and mining activities.

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 effects can be obtained by calling the EPA's Safe Drinking Water Hotline (800-426-4791).

EPA requires us to monitor for more than 80 potential contaminants. The regulated contaminants that have been detected in Bismarck's drinking water are shown on the attached table. The table also shows the maximum level that was detected and compares this to the EPA drinking water standards. These results show that Bismarck's water meets all EPA water quality requirements.

# Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immune-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).

# Revised Total Coliform Rule (*RTCR*)

**System Name: City of Bismarck**
**Public Water System (PWS) Number ND0800080**

Our system is required to monitor for total coliform bacteria in our drinking water. Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessments to identify problems and to correct any problems found during these assessments.

A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.

A level 2 assessment is a more comprehensive examination of the system's monitoring and operational practices than the Level 1 assessment. Each element is investigated in more detail. During the past year, we were required to conduct one Level 2 assessment. One Level 2 assessment was completed.

The Level 2 Assessment was triggered when one sample taken 8/16/2023, one sample taken 8/21/2023; one sample taken 8/23/2023; and one sample each day 8/24/2023 and 8/28/2023 also tested positive for total coliform bacteria. The assessment was completed on 9/6/2023, as required. Corrective Action: The affected area was isolated, flushed, disinfected, and retested. Subsequent samples were acceptable. There were no sanitary defects identified. There are no outstanding corrective actions.

# Concerning Lead in Our Water

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 Bismarck Water Treatment Facility 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 http://www.epa.gov/safewater/lead.

# To Learn More

We encourage public interest and participation in our community's decisions affecting drinking water. Regular City Commission meetings are held on the second and fourth Tuesday of each month at 5:15 pm in the Tom Baker Meeting Room at the City/County Building at 221 North 5th Street. The public is welcome to attend. These meetings are also televised on Dakota Media Access, Channel 2. You can learn more about the Bismarck Water Treatment Facility at www.bismarcknd.gov. Water quality data for community water systems throughout the United States is available at https://waterdata.usgs.gov/nwis.

We would appreciate the cooperation of large volume water customers in posting copies of this report in conspicuous locations or distributing them to tenants, residents, patients, students, or employees, so individuals who consume the water, but do not receive a bill can learn more about our water system. Extra copies of this report are available at the Water Plant, the Public Works Department (601 S 26th Street) or the Bismarck Public Library (515 N 5th Street).

If you have questions about this report, need the report translated for non-English speaking consumers, or would like more information please call:

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|---|---|
| Jim Kershaw, Water Plant Superintendent | **(701) 355-1662** |
| Michelle Klose, Director of Utility Operations | **(701) 355-1700** |
| For questions about your utility bill call | **(701) 355-1700 Opt. 1** |

# 2023 Water Quality Testing Results for Regulated Contaminants

| Contaminant | Date tested | unit | MCL | MCLG | Compliance Level | Range of detections | Major Sources | Violation? |
|---|---|---|---|---|---|---|---|---|
| **Inorganic Contaminants** | | | | | | | | |
| Nitrate-Nitrite | 4/11/2023 | ppm | 10 | 10 | 0.031 | NA | Fertilizer runoff, leaching from septic tanks, sewage. | No |
| **Disinfectants** | | | **MRDL** | **MRDLG** | | | | |
| Chloramine | 12/31/2023 | ppm | 4.0 | 4 | 2.2 | 0.00 to 2.46 | Water additive used to control microbes | No |
| **Total Organic Carbon (TOC) Removal** | | | | | | | | |
| Total Alkalinity (source) | 5/31/2023 | MG/L | | | 241 | 156.00 to 241.00 | Natural erosion, certain plant activity, certain industrial | No |
| Total Organic Carbon (source) | 4/30/2023 | MG/L | | | 4.1 | 3.20 to 4.10 | Naturally present in the environment | No |
| Total Organic Carbon (finished) | 3/31/2023 | MG/L | | | 2.5 | 2.20 to 2.50 | Naturally present in the environment | No |
| **Stage 2 Disinfection Byproducts** | | | **MCL** | **MCLG** | | | | |
| Total Trihalomethanes (TTHM) | 12/31/2023 | ppb | 80 | | 35 | 28.35 to 37.33 | By-product of drinking water chlorination | No |
| Total Haloacetic Acids (HAA5) | 6/30/2023 | ppb | 60 | | 13 | 7.9 to 14.32 | By-product of drinking water chlorination | No |
| **Lead and Copper Sampling at Residential Taps** | | | | | 90th percentile | Exceedance | | |
| Lead | 8/5/2021 | ppb | AL=15 | | 4.2 | 1 | Corrosion of household plumbing systems | No |
| Copper | 8/5/2021 | ppm | AL=1.3 | | 0.03 | 0 | Corrosion of household plumbing systems | No |

**Assessment Data - RTCR**

| Type | Date | Reason | Completed |
|---|---|---|---|
| Level 2 | 8/16/2023 | 2nd Level 1 Assessment in 12 Months | Yes |

**Key to Tables**

ppm = parts per million, or milligrams per liter (mg/L)
ppb = parts per billion, or micrograms per liter (ug/L)
ppt = parts per trillion or nanograms per liter (ng/L)
ppq = parts per quadrillion or picograms per liter (pg/L)
ND = none detected
IDSE = Initial Distribution System Evaluation
NA = not applicable
pCi/L = Picocuries per liter (a measure of radioactivity)
NTU = Nephelometric turbidity units
umho/cm=micromhos per centimeter (a measure of conductivity)
obsvns=observations/field at 100 Power

**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.
**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.
**Maximum Residual Disinfectant Level Goal (MRDLG):** The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect necessary for control of microbial contaminants.
**Treatment Technique (TT):** A required process intended to reduce the level of a contaminant in drinking water.
**Action Level (AL):** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow. For lead and copper, the Action Level is exceeded if the 90th percentile value exceeds the Action Level.
Thirty sites were sampled for lead, thirty sites for copper and one site exceeded the Action Level for lead, no sites exceeded the Action Level for copper.
**Range of Detections:** The lowest to the highest result value recorded during the required monitoring timeframe for systems with multiple entry points.

**Surface Water Treatment Rule Monitoring Data**
Lowest monthly percentage of samples meeting turbidity limits =100. Highest single measurement = 0.188.
Highest Compliance Level: The highest level of that contaminant used to determine compliance with a National Primacy Drinking Water Regulation.
Turbidity is a measure of the cloudiness of water. We monitor it because it is a good measure of the effectiveness of our filtration system. Turbidity has no health effects; however, it can interfere with disinfection or provide a medium for microbial growth. Compliance is determined by the percentage of samples that meet the limit of 0.3 NTU.

**Source Water Microbiological Monitoring**
E. coli is an indicator bacteria commonly found in surface water and originates in the intestinal tract of warm-blooded animals, some types of E. coli bacteria are pathogenic. It is effectively removed by filtration and destroyed by chlorination and was not detected in the finished water or in the distribution system through our Coliform/E. coli bacterial testing program in 2023.