

Annual Drinking Water Quality Report Lincoln, North Dakota 2018

We are very pleased to provide you with this year's *Annual Drinking Water Quality Report*. This report is designed to inform you about the safe clean water and services we have delivered to you over the past year. Our 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. Our water source is purchased surface water from the city of Bismarck. The city of Bismarck treats surface water drawn from the Missouri River.

The North Dakota Department of Health has prepared a Source Water Assessment for our water and is on file with the city of Bismarck.

The city of Bismarck, 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. No significant sources of contamination have been identified.

If you have any questions about this report or concerning your water utility, please contact Rob Dickson, City PWS at 701-258-7969. 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 first Thursday following the first Thursday day of every month at 7:00 PM in the Lincoln City Hall. If you are aware of non-English speaking individuals who need help with the appropriate language translation, please call Rob at the number listed above.

The city of Lincoln would appreciate it if large volume water customers would please post copies of the *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.

The city of Lincoln routinely monitors for contaminants in your drinking water per Federal and State laws. The following table shows the results of our monitoring for the period of January 1st to December 31st, 2018. 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.

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).

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.

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 storm water, industrial or domestic wastewater discharges, oil production, mining or farming.

Pesticides and herbicides, which come from a variety of sources such as agriculture, urban storm water 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 storm water runoff and septic systems.

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

To ensure that tap water is safe to drink, the Environmental Protection Agency (EPA) prescribes regulations which limit the number 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 table, you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:

Not applicable (NA), No Detect (ND)

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 ($\mu\text{g/l}$) - 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) –Pico curies per liter is a measure of the radioactivity in water.

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

Treatment Technique (TT) - A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

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

Maximum Contaminant Level Goal - The “Goal” (MCLG) is 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.

Maximum Residual Disinfectant Level (MRDL) – 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.

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 the benefits of the use of disinfectants to control microbial contaminants.

2018 Test Results for the cities of Lincoln & Bismarck, North Dakota

<u>Contaminant</u>	<u>MCLG</u>	<u>MCL</u>	<u>Level Detected</u>	<u>Units</u>	<u>Range</u>	<u>Date (year)</u>	<u>Violation Yes/No Other Info</u>	<u>Likely Source of Contamination</u>
Inorganic Contaminants								
Barium	2	2	0.00516	ppm	N/A	2017	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Cyanide	200	200	66	ppm	N/A	2015	No	Discharge from steel/metal factories; discharge from plastic & fertilizer factories
Fluoride	4	4	0.648	ppm	N/A	2017	No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Synthetic Organic Contaminants including Pesticides & Herbicides								
Pentachlorophenol	0	1	0.03	ppb	N/A	2017	No	Discharge from wood preserving factories
Volatile Organic Contaminants								
Dichloromethane	0	5	1.1	ppb	No Detect to 1.0	2018	No	Discharge from pharmaceutical and chemical factories.
Microbiological Contaminants								
Turbidity**	N/A	TT=3	0.08	NTU	N/A	2018	100% of samples met Turbidity Limits	Soil runoff
Lead/Copper								
Copper	N/A	AL=1.3	0.0248 90 th % Value	ppm	N/A	2017	0 sites exceeded AL	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead*	N/A	AL=15	No Detect 90 th % Value	ppb	N/A	2017	0 sites exceeded AL	Corrosion of household plumbing systems, erosion of natural deposits
Stage 2 Disinfection By-Products (System-Wide)								
HAA5 System-Wide	N/A	60	11	ppb	4.25 to 13.55	2018	No	By-product of drinking water chlorination
TTHM System-Wide	N/A	80	21	ppb	10.92 to 24.45	2018	No	By-product of drinking water chlorination
Disinfectants								
Chloramines	MRDLG =4	MRDL =4.0	2.4	ppm	1.65 to 2.77	2018	No	Water additive used to control microbes
Total Organic Carbon Removal								
Alkalinity, Source	N/A	N/A	253	Mg/l	202.00 to 253.00	2018	No	Natural erosion, certain plant activities, certain industrial wastewater discharges

Carbon, Total Organic (TOC) - Finished	N/A	N/A	2.6	Mg/l	2.00 to 2.60	2018	No	Naturally present in the environment
Carbon, Total Organic (TOC)- Source	N/A	N/A	4.9	Mg/l	4.40 to 4.90	2018	No	Naturally present in the environment
Unregulated Contaminants								
Alkalinity, Total	N/A	N/A	82	ppm	58 to 82	2018	No	N/A
Orthophosphate	N/A	N/A	1.9	ppm	1.1 to 1.9	2018	No	N/A
pH	N/A	N/A	9.45	pH	9.12 to 9.45	2018	No	N/A
Radioactive Contaminants								
Gross Alpha, Including RA, Excluding RN & U	15	15	No Detect	pCi/l	N/A	2017	No	Erosion of natural deposits
Radium, Combined (226, 228)	N/A	5	1.17	pCi/l	N/A	2017	No	Erosion of natural deposits
Uranium, Combined	N/A	30	No Detect	ppb	N/A	2017	No	Erosion of natural deposits

Lowest Monthly Percentage of Samples Meeting Turbidity Limits = 100%
Highest Single Measurement = 0.08

**Turbidity is a measure of the cloudiness of the water. The city of Bismarck monitors it because it is a good indicator of the effectiveness of their filtration system. 100% of samples met turbidity limits.

Source Water Microbiological Monitoring:

In 2018, five (5) samples were collected from the horizontal collector well for E. coli analysis and there was no detection. 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.

Violation: Bacteriological Maximum Contaminant Level (MCL) Exceedance, E. coli June 2018: June 2018 had the highest number of Total Coliform samples with 2 samples positive for that month. 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. The initial June 2018 samples also tested positive for E. Coli. E-Coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly and people with severely-compromised immune systems. When this happens we are required to perform an assessment and take additional samples within the distribution system. Follow-up samples were satisfactory and in compliance. All subsequent bacteriological samples have been free from Total Coliform and E. Coli bacteria.

Bacteriological Monitoring Data-RTCR

Total Coli Form Data: June had the highest number of Total Coli Form Samples.

Total Coli Form Positives for that month: (2) Coli forms are bacteria that are naturally present in the environment and are used as an indicator that other potentially-harmful, bacteria may be present.

E-Coli Data: Total number of samples detected in 2018: (2)

2018 Consumer Confidence Report - System Assessment Information and Corrective Actions Required Under the Revised Total Coliform Rule (RTCR)

City Lincoln; Public Water System (PWS) Number ND0800570.

- Our system is required to monitor monthly 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 that were found during these assessments.
- A Level 2 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.
- During the past year we were required to conduct one Level 2 assessment. One Level 2 assessment was completed.
- June 2018 had the highest number of positive samples. Two samples were positive for Total coliform and E. coli that month. The Level 2 assessment was triggered on 6/18/2018. The assessment was completed on 6/26/2018.
- Corrective Actions: No sanitary defects were found. The city has returned to compliance and the assessment has been closed.
- Subsequent bacteriological samples have been satisfactory.

EPA requires monitoring of over 80 drinking water contaminants. Those contaminants listed in the tables above are the only contaminants detected in your drinking 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 city of Lincoln 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>.

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.

MCL's are set at very stringent levels. To understand the possible health effects described for many regulated contaminants, 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.

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/Center 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 (1-800-426-4791).

Please call Rob Dickson, City PWS at 701-258-7969 if you have questions concerning your city's water system.

The city of Lincoln works diligently 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 community, our way of life and our children's future.

