

Annual Drinking Water Quality Report

Hebron, North Dakota

2016

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. Our water source is treated surface water purchased from the Southwest Water Authority (SWA). The source of SWA water is Lake Sakakawea. The SWA then delivers the partially treated water to a lime-softening treatment plant at Dickinson. The water is then clarified, softened, filtered, and disinfected before being delivered to our customers.

The North Dakota Department of Health has prepared a Source Water Assessment for the city of Hebron and the Southwest Water Authority. Information regarding this program is available upon request.

The Southwest Water Authority, 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 Jim Raaf, Public Works Superintendent, at (701) 878-4600. 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 each month at 7:00 PM in the Hebron Community Center. If you are aware of non-English speaking individuals who need help with the appropriate language translation, please call Jim at the number listed above.

The city of Hebron would appreciate it if large volume water customers would please 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.

The City of Hebron 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 January 1st to December 31st, 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 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.

System Assessment Information and Corrective Actions Required Under the Revised Total Coliform Rule (RTCR): City of Hebron; Public Water System (PWS) Number ND3000473

- 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 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.
- During the past year we were required to conduct one Level 1 Assessment. One Level 1 Assessment was completed.
- October had the highest number of positive Total Coliform samples. Two samples were positive for that month. The Level 1 Assessment was triggered on 10/04/2016. The assessment was completed on 10/20/2016. No corrective actions were required as positive samples were deemed to have been caused by sampling error or recent water main repair activities.
- Subsequent bacteriological samples have been satisfactory.

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.

In order to ensure that tap water is safe to drink, the Environmental Protection Agency (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 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)

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) - picocuries 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.

IDSE – Initial Distribution Systems Evaluations.

Obsvns – Observations/field at 100 Power.

TEST RESULTS FOR THE CITY OF HEBRON

<u>Contaminant</u>	<u>MCL G</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>
Lead/Copper								
Lead	0	AL= 15	No Detect	ppb	NA	2016	0 sites exceeded AL	Corrosion of household plumbing systems, erosion of natural deposits
Copper	1.3	AL= 1.3	0.0764	ppm	NA	2016	0 sites exceeded AL	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Microbiological Contaminants								
Turbidity*	NA	TT=3	.18	NTU	NA	2016	100% of samples met Turbidity Limits	Soil runoff
Inorganic Contaminants								
Barium	2	2	0.0126	ppm	NA	2016	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Fluoride	4	4	0.92	ppm	NA	2016	No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate-Nitrite	10	10	0.04	ppm	NA	2016	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Selenium	50	50	1.12	ppb	NA	2010	No	Discharge from petroleum and metal refineries

Radioactive Contaminants								
Gross Alpha, including Ra, excluding Rn U	15	15	0.01608	ppb	NA	2009	No	Erosion of natural deposits
Radium Combined (226,228)	0	5	1.05	ppb	NA	2009	No	Erosion of natural deposits
Uranium, Combined	0	30	0.024	ppb	NA	2009	No	Erosion of natural deposits
Disinfection Byproducts								
Total Halo acetic Acids (HAA5)	NA	60	10	ppb	NA	2016	No	By-product of drinking water chlorination
Total Trihalomethanes (TTHMs)	NA	80	8	ppb	NA	2016	No	By-product of drinking water chlorination
Disinfectants								
Chloramines	MRD LG =4	MRDL =4.0	3.1	ppm	1.2-3.54	2016	No	Water additive used to control microbes
Total Organic Carbon Removal								
Alkalinity, Source	NA	NA	174	mg/l	163-174	2016	No	Natural erosion, certain plant activities, certain industrial wastewater discharges
Carbon, Total Organic (TOC) - Finished	NA	TT	2.88	ppm	1.99-2.88	2016	No	Naturally present in the environment
Carbon, Total Organic (TOC)- Source	NA	TT	4.47	ppm	2.96-4.47	2016	No	Naturally present in the environment
Unregulated Contaminants								
Alkalinity, Carbonate	NA	NA	5	ppm	ND to 5	2016	N/A	N/A
Bicarbonate as HCO ₃	NA	NA	212	ppm	87-212	2016	N/A	N/A
Calcium	N/A	N/A	36.8	ppm	N/A	2016	N/A	N/A
Chloride	N/A	N/A	13.8	ppm	N/A	2016	N/A	N/A
Conductivity @ 25 C UMHOS/CM	N/A	N/A	621	umho/cm	N/A	2016	N/A	N/A
Hardness, Total (As CaCO ₃)	N/A	N/A	155	ppm	N/A	2016	N/A	N/A
Magnesium	N/A	N/A	15.2	ppm	N/A	2016	N/A	N/A
PH	N/A	N/A	8.76	PH	N/A	2016	N/A	N/A
Potassium	N/A	N/A	4.4	ppm	N/A	2016	N/A	N/A
Sodium	N/A	N/A	71.8	ppm	N/A	2016	N/A	N/A
Sodium Adsorption Ratio	N/A	N/A	2.51	obsvns	N/A	2016	N/A	N/A
TDS	N/A	N/A	391	ppm	N/A	2016	N/A	N/A

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

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

Source Water Microbiological Monitoring

SWA has a program of testing its untreated water supply for Cryptosporidium, Giardia and E. Coliform as part of Round 2 of the Long Term 2 Enhanced Surface Water Treatment Rule.

- Cryptosporidium is a microbial parasite found in surface water throughout the U.S. Although filtration removes Cryptosporidium, the most commonly used filtration methods cannot guarantee 100 percent removal. SWA monitoring did not detect any presence in the source water.
- Giardia is a microbial parasite found in surface in source water. SWA monitoring did not detect any presence in the source water.
- Filtration, as used at the Dickinson Water Treatment Plant, effectively removes Giardia.
- E. Coliform is a pathogenic bacteria commonly found in surface water originates in the intestinal tract of warm blooded animals. Our monitoring did not detect any presence in the source 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 Hebron 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>.

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 Environmental Protection Agency's Safe Drinking Water Hotline (1-800-426-4791).

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/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 Jim Raaf, Public Works Superintendent, at (701) 878-4600 if you have questions concerning your water system.