

Annual Drinking Water Quality Report

Pembina, 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. The city of Pembina purchases its water from North Valley Water District System II. North Valley Water District water source for System II (Akra System) is entirely groundwater. Water for the Akra system is obtained from the Icelandic Aquifer, drawn from 51 production wells located throughout seven sections of land west of Cavalier, North Dakota in Akra Township. Total pumping capacity of this well field is approximately 2,200 gallons per minute. The average well depth varies from 60 to 95 feet.

North Valley Water District System II is participating in North Dakota's Wellhead Protection Program. The North Dakota Department of Health has prepared a Source Water Assessment for North Valley Water District System II. Information on both these programs is available to the public during normal business hours. 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 susceptible* to potential contaminants. No significant sources of contamination have been identified.

Pembina 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 Gary Helland, Public Works Superintendent, at (701) 825-6932. 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 6:00 PM in Pembina City Office Building. If you are aware of non-English speaking individuals who need help with the appropriate language translation, please call Gary Helland at the number listed above.

Pembina 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.

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.

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 tables on pages 3 & 4, 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- (N/A)

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.

Initial Distribution System Evaluation (IDSE)

| 2016 TEST RESULTS FOR THE CITY OF PEMBINA AND NORTHEAST RURAL WATER DISTRICT-NORTH VALLEY BRANCH | | | | | | | | |
|---|-------------|------------|-----------------------|-------------------------|--------------|--------------------|------------------------------------|--|
| <u>Contaminant</u> | <u>MCLG</u> | <u>MCL</u> | <u>Level Detected</u> | <u>Unit Measurement</u> | <u>Range</u> | <u>Date (year)</u> | <u>Violation Yes/No Other Info</u> | <u>Likely Source of Contamination</u> |
| Radioactive Contaminants (Northeast RWD) | | | | | | | | |
| Gross Alpha, Inclng RA, Exclng Rn & U | 15 | 15 | ND | pCi/l | N/A | 2015 | No | Erosion of natural deposits |
| Radium, Combined (226, 228) | 0 | 5 | 0.09 | pCi/l | N/A | 2015 | No | Erosion of natural deposits |
| Uranium, Combined | 0 | 30 | 2.45 | ppb | N/A | 2015 | No | Erosion of natural deposits |
| Inorganic Contaminants (Northeast RWD) | | | | | | | | |
| Arsenic* | 0 | 10 | 1.46 | ppb | N/A | 2016 | No | Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes |

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|--|-------------|------------|--------------------------------------|-------------------------|--------------|--------------------|------------------------------------|--|
| Lead/Copper (City of Pembina) | | | | | | | | |
| Copper | 1.3 | AL=1.3 | 0.378 90 th % Value | ppm | N/A | 2016 | *No | Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives |
| Lead | 0 | AL=15 | 2.12 90 th % Value | ppb | N/A | 2016 | *No | Corrosion of household plumbing systems, erosion of natural deposits |
| Disinfectants (City of Pembina) | | | | | | | | |
| Chlorine | MRDL=4 | MRDL=4 | 1.0 | ppm | 0.39 to 1.45 | 2016 | No | Water additive used to control microbes |

| Stage 2 Disinfection Byproducts (TTHM/HAA5) (City of Pembina) | | | | | | | | |
|---|---|----|----|-----|-----|------|----|---|
| HAA5 | 0 | 60 | 11 | ppb | N/A | 2016 | No | By-product of drinking water chlorination |
| TTHM | 0 | 80 | 19 | ppb | N/A | 2016 | No | By-product of drinking water chlorination |

* While your drinking water meets EPA's standard for arsenic, it does contain low levels of arsenic. EPA's standard balances the current understanding of arsenic's possible health effects. EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. EPA continues to research the health effects of low levels of arsenic which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

* No sites exceeded the lead or copper action levels

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.

As you can see by the tables on pages 3 & 4 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 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).

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 Pembina 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>.

Please call Gary Helland, Public Works Superintendent, at (701) 825-6932 if you have questions concerning your water system.

The City of Pembina 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.

Mayor of Pembina

Kyle Dorion

Pembina Council Members

Cody Carpenter, Ron Fritz, Allen Huttunen, Corie Koropatnicki,
Connor Snitker, Joan Studney

Pembina City Auditor

Lisa Plante

Pembina Public Works Superintendent

Gary Helland