



## WAUPUN UTILITIES 2016 ANNUAL WATER QUALITY REPORT

The Waupun Utilities is pleased to present you with its annual Water Quality Report for 2016. This report provides a complete summary of water quality information from 2016 and also includes general information describing the city's water system, services and other activities of interest. The Waupun Utilities is committed to providing its customers with clear information describing water quality. Informed customers are strong allies.

**During 2016, the Utility had no violations of maximum contaminant levels or other water quality standards.**

### **Our Water Supply**

Waupun Utilities obtains its groundwater supply from five wells ranging in depth from 611 to 921 feet. These wells penetrate the St. Peter, Prairie du Chien, Trempealeau, Franconia, Galesville, Eau Claire and Mr. Simon formations. These five wells are capable of pumping 7.7 million gallons per day.

The Utilities average day design flow is 1.2 million gallons per day based on the capacity of one iron filter and one reverse osmosis system in operation. The maximum capacity of the plant is 2.9 million gallons per day with both iron filters and both reverse osmosis systems in service.

The plant removes iron and manganese, which may cause discoloring and taste issues. Raw well water contains approximately 25 grains of hardness. The treatment plant softens water down to approximately 5 grains of hardness, requiring no in-home softening or iron removal.

In 2016 fluoride dosages from all City sample sites averaged 0.62 PPM and 1.0 PPM, respectively. Water samples are routinely taken and analyzed for contaminants as required by Federal and State regulations. Unless otherwise noted, information shown in this report is for the period January 1 through December 31, 2016. This report contains many terms and abbreviations related to water quality that our customers may not be familiar with. A summary of terms, abbreviations and definitions is included in this report to help you better understand the information.

### **Why are there contaminants in my drinking water?**

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 Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791), or by visiting their Office of Water website at [www.epa.gov/OW](http://www.epa.gov/OW).

## **Do I need to take special precautions?**

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 (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the environmental protection agency's Safe Water Drinking Hotline (800-426-4791). The Waupun Utilities vigilantly tests and monitors the City's water supply to assure the end quality to consumers. Test results have detected some contaminants. The Water Quality Data Table section of this report provides information showing that all water quality criteria met or exceeded Federal and State requirements in 2016.

**The EPA has determined that City of Waupun water is safe at the levels detected.**

## **Water Quality at the Wells**

Samples are taken periodically (as required by sampling schedules issued by the Wisconsin DNR) at Utility wells to monitor concentrations of several common indicators. The information shown below shows ranges of results of water samples taken directly from the Utilities five active wells, in accordance with sampling requirements and schedules provided by the DNR.

### **Well Contaminants**

Indicator	Range of Results	Average
Alkalinity	264 - 366	300
Calcium	69 - 144	87
Chloride	2 - 135	28
Hardness	300 - 335	320
Iron	0.85 - 1.4	1.1
Magnesium	29 - 172	63
Manganese	0.02 - 0.5	0.083
pH	7.0 - 7.3	7.2

## **Water Quality Data Table**

The Water Quality Data Table that follows lists all drinking water contaminants detected and the most recent sample date. The EPA or the DNR allows the Water Utility to monitor for certain contaminants less than once per year because concentrations of these contaminants do not change frequently.

### **Water Quality Data Table**

#### **Inorganic Contaminants**

Contaminants (units)	MCLG	MCL	Your Water	Range Low	Range High	Sampled Date	Violation	Typical Source
Antimony (ppb)	6	6	ND	ND	ND	2014	NO	Discharge from petroleum refineries; fire retardants; ceramic; electronics; solder.
Arsenic (ppb)	0	10	ND	ND	ND	2014	NO	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics productions wastes.
Barium (ppm)	2	2	0.0797	0.0797	0.0797	2014	NO	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.

### Water Quality Data Table Continued

#### Inorganic Contaminants

Contaminants (units)	MCLG	MCL	Your Water	Range Low	Range High	Sampled Date	Violation	Typical Source
Cadmium (ppb)	5	5	ND	ND	ND	2014	NO	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints.
Total Chromium (ppb)	100	100	ND	ND	ND	2014	NO	Discharge from steel and pulp mills; erosion of natural deposits; corrosion of household plumbing systems.
Fluoride (ppm)	4	4	0.765	.62	1	2016	NO	Erosion of natural deposits; water additive which promotes strong teeth.
Mercury (ppb)	2	2	ND	ND	ND	2014	NO	Erosion of natural deposits; discharge of refineries and factories; runoff from landfills; runoff from cropland.
Nickel (ppb)	100	100	1.4	1.4	1.4	2014	NO	Nickel occurs naturally in soils, groundwater and surface waters and is often used in electroplating, stainless steel and alloy products.
Nitrate Nitrogen (ppb)	10	10	ND	ND	ND	2016	NO	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits. Highest average from any individual sample site.
Nitrite Nitrogen (ppb)	1	1	ND	ND	ND	2014	NO	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
Selenium (ppb)	50	50	ND	ND	ND	2014	NO	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines.
Thallium (ppb)	0.5	2	ND	ND	ND	2014	NO	Leaching from ore-processing sites; discharge from electronics, glass and drug factories.

### Water Quality Data Table

#### Unregulated Contaminants

Contaminants (units)	MCLG	MCL	Your Water	Range Low	Range High	Sampled Date	Violation	Typical Source
Bromoform (ppb)	NR	NR	ND	ND	ND	2016	NO	Range reflects highest results from monitoring sites.
Bromodichloromethane (ppb)	NR	NR	ND	ND	ND	2016	NO	Range reflects highest results from monitoring sites.
Chloroform (ppb)	NR	NR	1.7	1.7	1.7	2016	NO	Range reflects highest results from monitoring sites.
Chlorodibromomethane (ppb)	NR	NR	ND	ND	ND	2016	NO	Range reflects highest results from monitoring sites.
Sodium (ppm)	NR	NR	14.6	14.6	14.6	2014	NO	Range reflects highest results from monitoring sites.

### Water Quality Data Table

#### Volatile Organic Contaminants

Contaminants (units)	MCLG	MCL	Your Water	Range Low	Range High	Sampled Date	Violation	Typical Source
Tetrachloroethylene (ppb)	0	5	ND	ND	ND	2016	NO	Discharge from factories and dry cleaners.
Trichloroethylene (ppb)	0	5	ND	ND	ND	2016	NO	Discharge from metal degreasing sites and other factories.
<b>Radioactivity</b>								
Gross Alpha (Excl R & U) (pCi/l)	0	15	3.1	3.1	3.1	2016	NO	Erosion of natural deposits.
Gross Alpha (Incl R & U) (pCi/l)	NR	NR	3.1	3.1	3.1	2016	NO	Erosion of natural deposits.
Radium (226+228) (pCi/l)	0	5	1.59	1.59	1.59	2016	NO	Erosion of natural deposits.

### Water Quality Data Table

#### Disinfection Byproducts

Contaminants (units)	MCLG	MCL	Your Water	Range Low	Range High	Sampled Date	Violation	Typical Source
HAA5 (ppb) Haloacetic Acid	60	60	0.885	0.87	0.9	2016	NO	By-product of drinking water chlorination; samples from distribution system.
TTHMs (ppb) Total Trihalomethanes	0	80	6.3	6.27	6.34	2016	NO	By-product of drinking water chlorination; samples from distribution system.

## Water Quality Data Table

### Inorganic Contaminants

Contaminants (units)	MCLG	AL	Your Water	Samples Taken	Sampled Date	Violation	Typical Source
*Copper (ppm)	1.3	1.3	0.0586	20	2014	NO	Erosion of natural deposits; leaching; corrosion of household plumbing systems; from wood preservatives.
*Lead (ppb)	0	15	0.888	20	2014	NO	Corrosion of household plumbing systems; erosion of natural deposits.

*\*Sampled every three years*

## Water Quality Data Table

### Microbiological Contaminants

Total 2016 samples from sites in the water distribution system	226
Number of coliform detects in 2016	0
Total 2016 samples from water system production wells	33
Number of coliform detects in 2016 production well samples	0

### Synthetic Organic Chemicals

Source water samples taken in 2014 showed no detectable synthetic organic chemicals. There were no sampling requirements for synthetic organic chemicals in 2016.
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## **Terms and Abbreviations used in this report**

- **Variations & Exemptions (V&E):** State or EPA permission not to meet an MCL or a treatment technique under certain conditions.
- **Non-Detects (n/d):** Laboratory analysis indicates the constituent is not present.
- **Not-Applicable (n/a):** Limits do not apply.
- **Not-Regulated (NR):** State or EPA has not established a limit.
- **Parts per million (ppm) or Milligrams per liter (mg/l):** One part per million corresponds to one minute in two years or one penny in \$10,000.
- **Parts per billion (ppb), or Micrograms per liter (µg/l):** One part per billion corresponds to one minute in 2,000 years or one penny in \$10,000,000.
- **Picocuries per liter (pCi/l):** Picocuries per liter is a measure of the radioactivity in water.
- **Total Coliform Rule (TCR):** Refers to EPA regulations for microbiological standards.
- **Treatment Technique (TT):** A required process intended to reduce the level of a contaminant in drinking water.
- **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 the MCLGs as feasible using the best available treatment technology. **MCLs are set at very stringent levels. To understand the possible health effects described for many regulated contaminants, a person would have to consume 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.**
- **\*AL (Action Level):** The concentration of a contaminant which, if exceeded, triggers a treatment or other requirement which a water system must follow. Systems exceeding a lead and/or copper action level must take actions to reduce lead and/or copper in the drinking water. The lead and copper values represent the 90th percentile of all compliance samples collected. If you want information on the number of sites or the actions taken to reduce these levels, please contact the Water Utility office.

## **Health Information**

### **Lead**

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 Waupun Utilities is responsible for providing high quality drinking water but cannot control the variety of materials used in plumbing components. 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 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 (800-426-4791) at [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead)

### **Radon**

Radon is a radioactive gas that you can't see, taste, or smell. It is found throughout the U.S. Radon can move up through the ground and into a home through cracks and holes in the foundation. Radon can build up to high levels in all types of homes. Radon can also get into indoor air when released from tap water from showering, washing dishes, and other household activities. Compared to radon entering the home through soil, radon entering the home through tap water will in most cases be a small source of radon in indoor air. Radon is a known human carcinogen. Breathing air containing radon can lead to lung cancer. Drinking water containing radon may also cause increased risk of stomach cancer. If you are concerned about radon in your home, test the air in your home. Testing is inexpensive and easy. Fix your home if the level of radon in your air is 4 Picocuries per liter of air (pCi/L) or higher. There are simple ways to fix a radon problem that aren't too costly. For additional information, call your state radon program or call EPA's Radon Hotline (800-SOS-RADON).

### **Nitrates**

Nitrates in drinking water at levels above 10 ppm are a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant you should ask advice from your health care provider.

## **Additional Lead Awareness**

### **Which homes are most at risk of having lead in drinking water?**

- Homes with lead household plumbing. This can be determined by a licensed plumber.
- Homes with copper piping and lead solder installed between 1982 and 1987. Lead-based solder was banned for use after this time.
- Homes with faucets or fittings of brass which contain some lead. Plumbing and fixtures installed before January 1, 2014 or purchased from sources outside of the United States may contain lead.

### **How to reduce the risk of lead in your drinking water:**

- Flush your plumbing before using tap water for drinking or cooking. Flush by running the kitchen faucet on cold for a minimum of 3 minutes.
- Use only cold water for cooking and drinking. Water from the hot tap water can dissolve lead more easily than cold water. Boiling water will not reduce the amount of lead in your drinking or cooking water. In fact, boiling can concentrate the lead in water.
- Inspect your faucet aerator. The aerator on the end of your faucet is a screen that can catch debris, including particles of lead. It is recommended to periodically remove the aerator and rinse out any debris.
- Purchase a home filtration system. Home drinking water filtration systems can reduce or eliminate lead. Be sure to look for products certified by NSF/ANSI under Standard 53 for removal of lead.
- Replace your lead service line or interior plumbing. Replacement must be done by a licensed plumber under contract from the homeowner.

### **Please direct any questions to:**

Steve Schramm  
Treatment Facilities Supervisor  
920-324-7920

## **Waupun Utilities Planning, Improvements and Operations**

### **Planning**

- Waupun Utilities owns and maintains \$22,000,000 in assets that treat, store, and distribute water to your home or business. These assets consist of five wells, a water treatment facility, one underground reservoir, two elevated water towers, over 50 miles of distribution mains, 3,500 services, and 420 hydrants.
- It is our utmost priority to provide safe, quality water at all times. We continue to monitor for specific contaminants, and strive to meet compliance requirements.

### **Improvements**

- Construction to the Cities West Main Street/Hwy 49 spanned over six months. This project consisted of infrastructure improvements, which involved replacement of 16 hydrants, 30 water valves, and 20 sewer manholes. Existing 6 and 8 inch water main was replaced with 10 inch main, along with new sewer main. A total combined main replacement of 6,400 feet.

### **Operations**

- Unidirectional flushing (UDF) program to remove mineral and sediment deposits that accumulate over time in the distribution system. UDF is a process designed to move water through pipelines in one direction at a high velocity and from a single water source. This systematic, street-by-street method of flushing is labor-intensive, requiring detailed preparation, planning and execution. UDF has been shown to scour water mains more effectively than traditional flushing. This highly effective flushing program will minimize the frequency of flushing events required by WDNR. In addition, UDF will promote water conservation and improve water quality.
- By regular valve exercising we will have detailed records to ensure the operability of our distribution system. Surveying helps identify the condition and location of all our valves. Knowing the condition of the valves and having an updated GIS system helps eliminate higher costs associated with water main breaks, lost time digging up buried valves, and congested traffic due to excavating roadways.
- Leak detection surveys are conducted on the distribution system with the aid of a correlator. A water leak/break is determined by the use of a correlator to find difficult leaks that are not easily located with traditional acoustical methods. The correlator utilizes two transmitters with sensitive microphones to listen on either side of the known or unknown leak and calculates (correlates) the exact distance to the leak by use of the signal delay, the sensor distance, and the sound velocity. Correlating reduces water loss, unplanned service disruptions, and reduces O&M costs.