

2015 Waconia Water Quality Consumer Confidence Report

Waconia's drinking water complies with

Last year, as in the past, Waconia's drinking water and the supply system that produces it were in full compliance with all applicable county, state, and federal regulations regarding drinking-water quality, monitoring, operations, and reporting.

What you need to know

What is the Consumer Confidence Report?

The Consumer Confidence Report (CCR) is an annual report required by the US Environmental Protection Agency (EPA) on the water quality of a particular water system such as Waconia. The report details and outlines contaminants and their levels in drinking water.

For whom is this report produced?

The CCR is produced for customers and wholesalers of Waconia and ensures that everyone is provided safe drinking water.

How much does it cost to receive this report?

This report is free of charge to all customers

Why am I getting this report?

Waconia is federally mandated by the EPA to provide this information to you. The Minnesota Department of Health enforces these rules for the EPA. Regulated drinking water substances that were detected during the 2015 calendar year are provided in the chart.

What authorities regulate contaminant levels?

To ensure that tap water is safe to drink, the EPA has prescribed regulations that limit the amounts of certain contaminants in water provided by public water systems such as Waconia's. Each drinking-water contaminant has an allowable MCL. Water for drinking that exceeds MCLs for one or more compounds is in violation of the law.

This report is published yearly for the Waconia drinking water consumer, to present an overview of water quality during January 1 to December 31, 2015. Because the city of Waconia a drinking water supplier, the City is required by the federal Safe Drinking Water Act (SDWA) of 1976, as amended in 1996, to produce an annual report on the quality of its drinking water.

In addition to advancing consumers' understanding of drinking water and heighten awareness of the need to protect precious water resources, the report will address:

- where our water comes from
- what analytical tests are conducted
- what those tests reveal about the water
- how those results compare to state standards

Among its other responsibilities, Waconia's Public Services Utilities Department is committed to providing all employees, facility-users, and other guests with safe drinking water while they are in the city. Waconia's drinking water supply system, which is considered by the EPA to be large water system serving 10,001-100,000 people. Waconia's water supply system includes four wells ranging from 345 to 735 feet deep, that draw water from the Quaternary Buried Artesian and Mt. Simon aquifers. There are a number of advantages to an underground water supply. Communities with underground wells are able to avoid the Cryptosporidium and Giardi micro-organisms, which can contaminate surface water supplies and cause intestinal disorders. These wells are dedicated to pumping drinking water to the Water Treatment Facility (see photo essay on page 4).

To make sure that Waconia's drinking water meets all applicable local, state and federal water-quality standards, Waconia's drinking water regularly tested using an independent laboratory approved by the Minnesota Department of Health.

To ensure that testing results comply with all applicable regulatory standards, analytical data are reviewed by the City's Utilities staff. For more information and/or copies of the complete analyses of Waconia's 2015 drinking-water samples discussed in this report, go to www.waconia.org or contact:

- Doug Bode, Utilities Supervisor, Public Services, City of Waconia, 952-442-2615 Ext. 1102, or publicservices@waconia.org



Reducing 'Rusty' Water Around the City

2015 Water-Main Flush Program Completed

Starting April 8th, water utilities staff worked their way around the City to flush Waconia's water mains. By systematically opening and closing fire hydrants, they began the City's 2015 water-main flushing program.

According to the American Water Works Association, unidirectional flushing of water mains using fire hydrants within a water-distribution system is the most effective and economical way to cleanse a water-distribution system and, improve water quality.

Performed one to two times a year, water main flushing typically takes place in the Spring and Fall. As a result of the flushing procedure, residents in the immediate vicinity of the work may experience temporary discoloration of their water. This discoloration consists primarily of harmless silt and precipitates and does not affect the safety of the water.

What should I do if my water is discolored?

If this discoloration occurs, simply run your cold water faucets for about 5 minutes to make sure the water is clear. If it doesn't clear up after a few minutes, wait for an extended period of time (up to 2 hours) and try running the cold faucets again. If the water does not clear up within two hours, please notify the City of Waconia Utilities Department. It is recommended that you do not do laundry during flushing periods to avoid stained clothing.

Why do we flush hydrants?

Water moves slowly through the underground water distribution system. This slow movement causes sediment like rust and minerals to build up over time and accumulate along the inside of the water pipes. Brown water is typically iron and manganese that is showing up in the system. Flushing of the fire hydrants increases the movement or velocity of the water through the water mains, thus helps to remove any sediment from the water mains and assures consistent water quality. Additionally, as part of the flushing process every fire hydrant in the water system is operated to ensure that it will operate properly in the event of a fire.

Isn't flushing a waste of water?

Residents who notice Waconia's utilities crew working at fire hydrants and see water running into the street may think that the City is ignoring its own philosophy on conserving water. The process of periodically flushing fire hydrants, however, is an important preventive maintenance activity. Although it may appear to waste water, this process is part of a routine maintenance program necessary to maintain the integrity of the water system and to continue to deliver the highest quality water possible to our customers.

What is in Our Drinking Water?

The Minnesota Department of Health has determined that the sources used to supply your drinking water is not particularly susceptible to contamination. If you wish to obtain the entire source water assessment regarding your drinking water, please call 651-201-4700 or 1-800-818-9318 during normal business hours. Also, you can view it on line at www.health.state.mn.us/divs/eh/water/swp/swa.

Call 952-442-2615 if you have questions about the City of Waconia drinking water or would like information about opportunities for public participation in decisions that may affect the quality of the water.

Results of Monitoring

No contaminants were detected at levels that violated federal drinking water standards. However, some contaminants were detected in trace amounts that were below legal limits. The table that follows shows the contaminants that were detected in trace amounts last year. (Some contaminants are sampled less frequently than once a year; as a result, not all contaminants were sampled for in 2015. If any of these contaminants were detected the last time they were sampled for, they are included in the table along with the date that the detection occurred.)



Key to abbreviations:

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.

MRDL—Maximum Residual Disinfectant Level.

MRDLG—Maximum Residual Disinfectant Level Goal.

AL—Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirement which a water system must follow.

90th Percentile Level—This is the value obtained after disregarding 10 percent of the samples taken that had the highest levels. (For example, in a situation in which 10 samples were taken, the 90th percentile level is determined by disregarding the highest result, which represents 10 percent of the samples.) Note: In situations in which only 5 samples are taken, the average of the two with the highest levels is taken to determine the 90th percentile level.

pCi/l—PicoCuries per liter (a measure of radioactivity).

ppm—Parts per million, which can also be expressed as milligrams per liter (mg/l).

ppb—Parts per billion, which can also be expressed as micrograms per liter (µg/l).

N/A—Not Applicable (does not apply).

No contaminants were detected at levels that violated federal drinking water standards.

Bottled Water Vs Tap Water Learn The Facts...



Tap Water vs. Bottled Water

Surveys have found that most consumers who drink bottled water do so because they enjoy its taste or its portable convenience. Others drink bottled water because they believe it to be more pure or safer than their tap water.

FACT: Did you know that the average bottle of water can cost up to 1,000 times more than tap water? Despite what its higher cost would lead us to believe, estimates are that 25-40 percent of the bottled water on the market is simply repackaged tap water. Tap water is regulated by the EPA under the Safe Drinking Water Act, while bottled water is considered a food and is thus regulated by the FDA. Though some bottlers may voluntarily exceed FDA standards, those standards are less stringent than the EPA standards for tap water. For more information, visit www.DrinkTap.org.

Contaminant (units)	MCLG	MCL	Level Found		Typical Source of Contaminant
			Range (2015)	Average/Result*	
Alpha Emitters (pCi/l) (06/16/2014)	0	15.4	N/A	4.5	Erosion of natural deposits.
Arsenic (ppb) (10/10/2013)	0	10	N/A	1.96	Erosion of natural deposits; Runoff from glass and electronics production wastes.
Barium (ppm) (10/10/2013)	2	2	N/A	.12	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Fluoride (ppm)	4	4	.82-1.2	1.25	State of Minnesota requires all municipal water systems to add fluoride to the drinking water to promote strong teeth; Erosion of natural deposits; Discharge from fertilizer and aluminum factories.
Haloacetic Acids (HAA5) (ppb)	0	60	12.3-16.8	16.8	By-product of drinking water disinfection.
TTHM (Total trihalomethanes) (ppb)	0	80	32.6-36.7	36.7	By-product of drinking water disinfection.
Nitrate (as Nitrogen) (ppm)	10.4	10.4	1.1-1.3	1.3	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.

*This is the value used to determine compliance with federal standards. It sometimes is the highest value detected and sometimes is an average of all the detected values. If it is an average, it may contain sampling results from the previous year.

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 microbial contaminants are available from the Safe Drinking Water Hotline at 1-800-426-4791.

2015 Analytical Data

Chlorine Disinfectant and Its By-Products

Daily, more than 200 million people in the U.S. consume water that has been disinfected to kill unwanted microorganisms found in source water. Worldwide, one of the most commonly used and effective disinfectants is chlorine. A form of chlorine called sodium hypochlorite is used by the City of Waconia for disinfection of its potable water.

Although disinfectants are effective in killing unwanted microorganisms in source water, they can react with naturally occurring organic matter and inorganics to form disinfectant by-products which may pose health risks.

As a result, the Safe Drinking Water Act was amended in 1996 to regulate disinfectants and their by-products. Waconia’s 2015 averages for chlorine residual and by-products are based on results from finished tap water. There were no violations in 2015.

Contaminant (units)	MRDLG	MRDL	****	*****	Typical Source of Contaminant
Chlorine (ppm)	4	4	.1-1.2	.68	Water additive used to control microbes.

****Highest and Lowest Monthly Average.

*****Highest Quarterly Average.

Contaminant (units)	MCLG	AL	90% Level	# sites over AL	Typical Source of Contaminant
Copper (ppm) (06/20/2014)	1.3	1.3	.93	0 out of 30	Corrosion of household plumbing systems; Erosion of natural deposits.
Lead (ppb) (06/20/2014)	0	15	2.6	1 out of 30	Corrosion of household plumbing systems; Erosion of natural deposits.

Lead and Copper

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. City of Waconia 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 or at <http://www.epa.gov/safewater/lead>.

Water Softener Settings

- Hardness = 27 grains
- Fluoride = 1.2ppm
- Iron = .05-.10ppm

Monitoring may have been done for additional contaminants that do not have MCLs established for them and are not required to be monitored under the Safe Drinking Water Act. Results may be available by calling 651-201-4700 or 1-800-818-9318 during normal business hours.

Latest Results from Lead & Copper Testing at 40 Representative Faucets Around Waconia

Since 1986 in the U.S., the use of lead in plumbing pipes, fixtures, fittings, and solder has been restricted by law, when the federal Safe Drinking Water Act was first amended to require a rule regulating lead and copper at the drinking-water consumer’s tap. Posing certain health risks to most people if consumed in excess, lead and copper enter drinking water mainly as a result of corrosion of plumbing materials. As a result, the federal “lead and copper rule” was issued in 1991 by the EPA to limit the concentration of these two metals in public water. In October 2007, the rule was revised, requiring water suppliers to reduce water corrosiveness in an attempt to protect public water-system consumers from excessive exposure to lead and copper even further.

To find out how well they are doing this, water suppliers are required to sample a representative number of consumers’ taps, with the frequency of sampling depending upon the size of the system and the system’s lead and copper results. Waconia’s sampling was last required and performed in 2015, and those aggregate results are reported below. Sampling will again take place in 2015, and those results will be reported in 2015.

The lead-and-copper rule revision also requires that Waconia notifies occupants of buildings that are part of the lead and copper tap-water sampling program of the test results for their specific faucets. These results are published in the annual Consumer Confidence Report, which is distributed to all on-site drinking-water consumers, including on-site residents.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women, infants, and young children. It is possible that lead levels in your residence may be higher than in other residences as a result of materials in your building’s plumbing. The City is responsible for providing high-quality drinking water, but it cannot control the variety of materials used in plumbing components.

So, when your water has been sitting for several hours, minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using the water for drinking or cooking. If you are concerned about lead in your water, contact Doug Bode at 952-442.2615 ext. 1102 about its testing. For information on lead in drinking water, call the Safe Drinking Water Hotline (1-800-426-4791) or go to <http://www.epa.gov/safewater/lead>

Report 90th percentile levels results for the 2015 lead/copper monitoring are as follows:

90th particle lead level= 4 µg/I (rounded as 0.004 mg/I).
The action level for lead is 15.0 µg/I

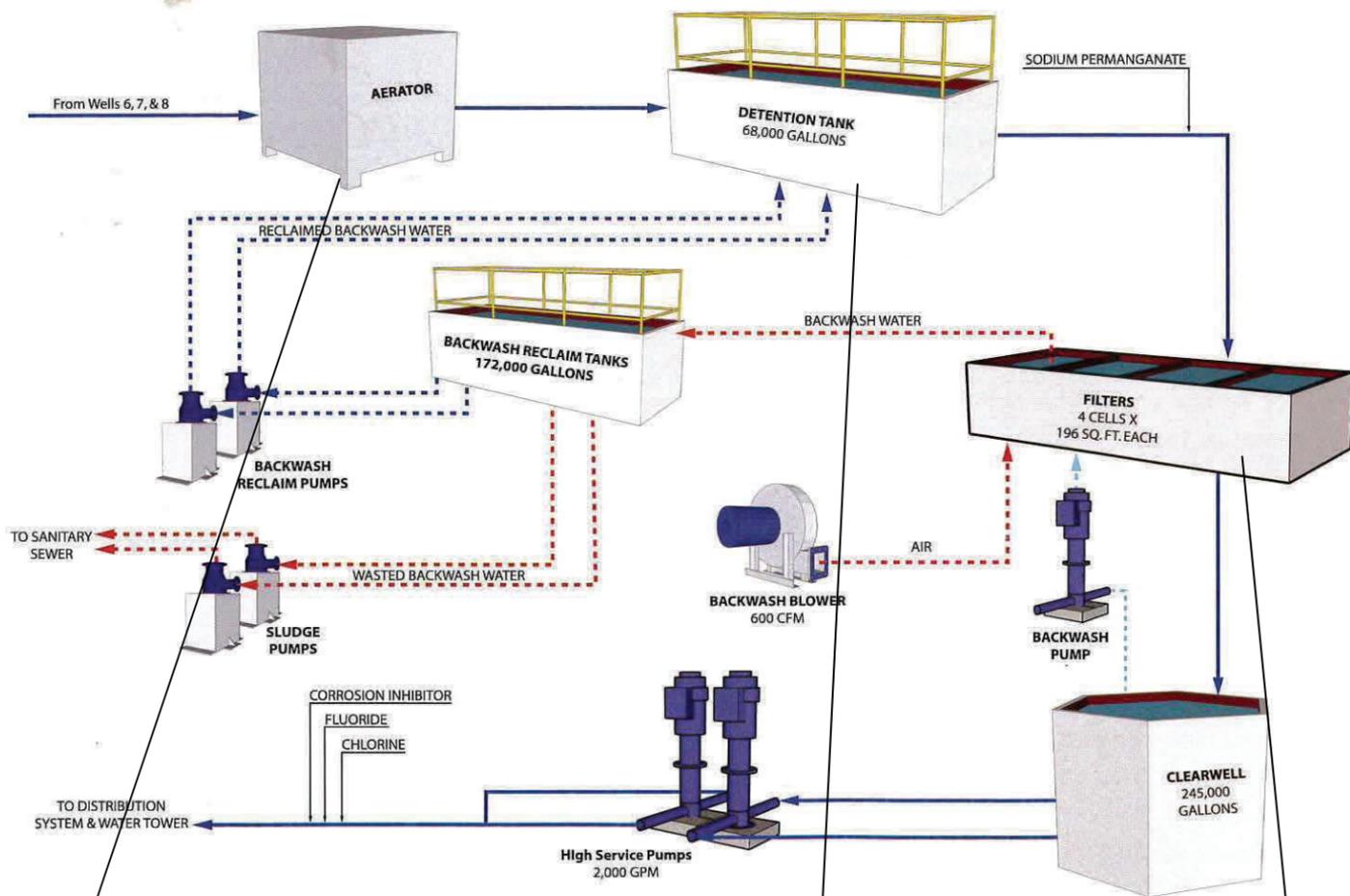
90th percentile copper level=858 µg/I (rounded as 0.858 mg/I).
The action level for copper is 1300 µg/I.

Based on these results the City of Waconia’s water system **did not exceed** the action level for lead and **did not exceed** the action level for copper.

Water Treatment Process

The water flows into an aerator where gases are removed, iron is oxidized, and oxygen is added. Fluoride is added under State law to prevent tooth decay and chlorine is added to kill any bacteria. It takes less than one drop of chlorine per gallon of water to kill bacteria. Polyphosphate for lead and copper corrosion control is also added. The water then flows through sand filters where the last of the impurities are removed. Once the water has been treated, it is stored in the City's 650,000 gallon clearwell. From there, water is pumped directly to residents and as much as 2,325,000 gallons can be stored in the City's three water towers for peak period usage.

Expansion Process Flow Diagram



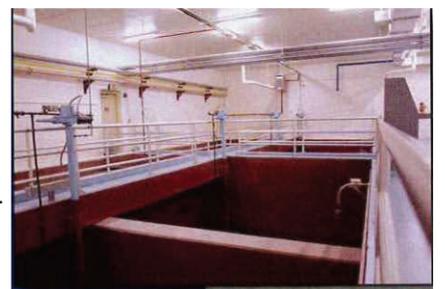
1. The purpose of aeration is to begin the oxidation of iron and manganese to an insoluble form so they can be filtered from the water. The water is pumped from the wells to the top of the aerator. The aerator is comprised of numerous pipes and through which the water flow over. A fan blow air through the aerator to further aid in the oxidation process



2. From the aerator, the water flows by gravity into an 68,000 gallon detention tank, which holds the water for approximately 35 minutes. The detention tank allows for further oxidation of the iron and manganese. The chemical sodium permanganate is added to the detention tank to assist in the oxidation of manganese.



3. After the detention tank, the water flows by gravity into four 14' x 14' filter basins. Each filter basin has an underdrain system, reverse graded gravel and filter media. The reverse graded gravel is a series of layers of progressively smaller gravel placed on top of the underdrain blocks designed to retain filter media. The filter media itself is composed of 24" of Filtersil sand. The sand filters out the iron and manganese, which were oxidized to form small rust particles in the previous stages.





4. The material that is trapped by the filter beds is removed from the filters by a process called backwashing. Backwashing is accomplished by means of reversing the flow of water through the filter. The process is further enhanced by blowing compressed air up through the underdrain blocks, causing the media to scour itself. This maximizes the cleaning of the filter bed media prior to returning it to service. The backwash water flows to the reclaim tank. The backwash reclaim tank is located underground, just northeast of the treatment plant, and has a total capacity of 172,000 gallons. The backwash water is returned to the beginning of the process and the settled solids are pumped to the sanitary sewer system for treatment

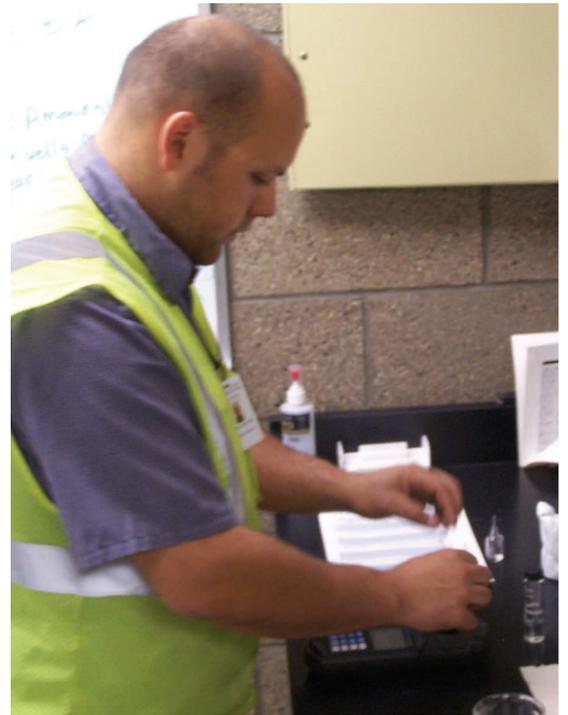


High Service Pumps

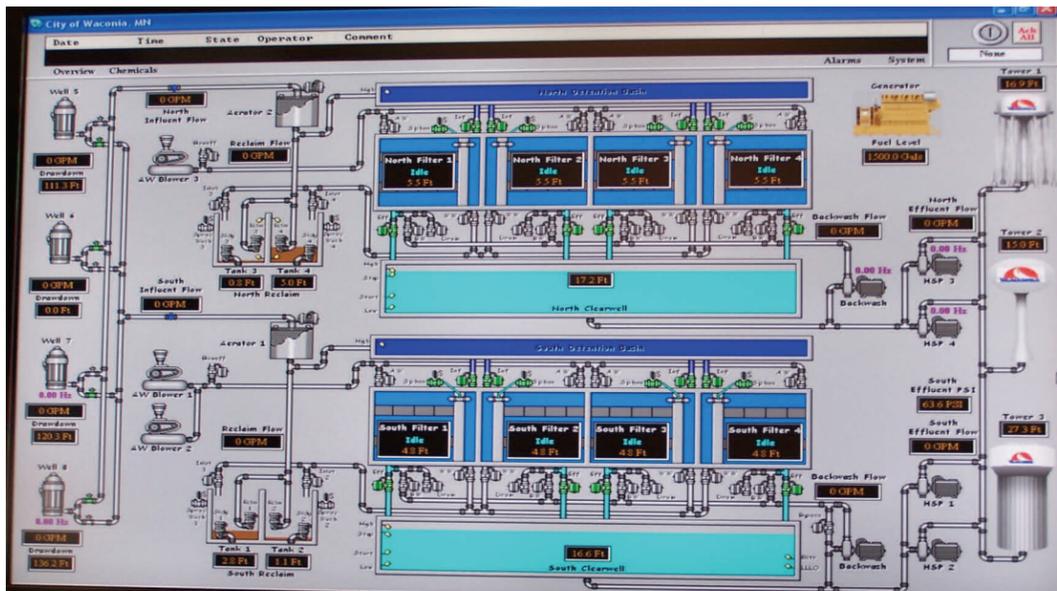
5. The filtered water then flows into a 245,000 gallon clearwell holding tank. Two 125HP high service pumps pump the water out of the clearwell into the distribution system and water tower. After the pumps, the water is enhanced to provide a disinfecting residual (chlorine) and fluoridated for public dental health. Corrosion Inhibitor is also added to decrease the corrosiveness to piping.



Water Tower #2

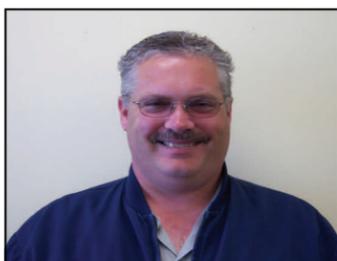


Utilities crew member Eric Menth checks fluoridation samples



6. The operation of wells, treatment plant and high service pumps are automatically controlled by an Allen Bradley Programmable Logic Controller (PLC) and a Supervisory Control And Data Acquisition (SCADA) computer. The PLC coupled with the SCADA system enables the operators to run the treatment plant directly from the control room.

Meet the Utilities Staff



Doug Bode– Utilities Supervisor



Jeff Hilgers– Utilities Crew Member



Eric Menth- Utilities Crew Member



Todd Karels- Utilities Crew Member

Compliance with National Primary Drinking Water Regulations

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, radioac-



tive 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 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 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 U. S. Environmental Protection Agency (EPA) prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration 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 health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.



Utilities crew member Jeff Hilgers monitors sewer lift station levels

Protecting Groundwater is Everyone's Business

The residents of Waconia and surrounding area rely on groundwater for their drinking water supply. There are several public and private drinking water wells located within the area. These wells draw water from groundwater aquifers located from 50 feet to several hundred feet underground. Groundwater aquifers are vulnerable to contamination from land use activities on the surface. The City of Waconia is working to protect their drinking water supplies by implementing a **WELLHEAD PROTECTION PLAN**. Wellhead Protection (WHP) is a way to prevent drinking water from becoming polluted by managing possible sources of contamination in the area that supplies water to the public. Protecting drinking water is an ongoing need for the community and everyone has an important role to play in this process. For more information on the City's WHP efforts, please contact Public Services

Wellhead Protection Goals

To determine how to best protect the drinking water supply, an in-depth evaluation was completed by the MN Department of Health identifying potential sources of contamination. A number of potential threats were cited including private wells, individual septic systems, leaking underground storage tanks, and stormwater runoff. In total, the City is trying to manage 15 contaminate sources. To assist with their ongoing efforts, the City of Waconia received a grant from the MN Department of Health to identify the number of unused wells within their groundwater recharge area. Once the City is aware of the number of unused wells, they can **present financial options to have the wells sealed**.

What Is An Unused Well—And Why Is It A Problem?

A well that is not in use—sometimes referred to as an “abandoned” well—can be a potential threat to health, safety, and the environment. Unused wells that have not been properly sealed can be a source of groundwater contamination, potentially affecting nearby drinking water wells. They may threaten the quality of water in the City's wells, your neighbor's well, or even your own well.

How Do Unused Wells Threaten Groundwater?

Groundwater is found in underground geologic formations called *aquifers*. The layers of rock and soil that lie between an aquifer and the surface, typically act as a natural barriers against the spread of contamination. However, an unused, unsealed well can provide an open channel between the surface and an aquifer, acting as a drain—allowing surface water runoff, contaminated water, or improperly disposed waste to reach an uncontaminated aquifer.

What Does the Law Require?

By law, a well must be in use, be under a *maintenance permit*, or be sealed by a licensed well contractor. A well must be sealed if: 1) the well is not in use, 2) the well is contaminated, 3) the well has been improperly sealed in the past, 4) the well threatens the quality of the groundwater, or 5) the well otherwise poses a threat to health or safety.

If you have an unused well—and wish to keep the well for future use—you must apply for a special *maintenance permit* from the MN Department of Health, which requires an annual fee.



Cross Connection Control

Do your part to help prevent the problems caused by backflow and cross connections.

Backflow, or backsiphonage, occurs when the pressure of a polluted source exceeds that of the drinking water supply, which can pull contaminants back into the drinking water supply. It can result in contaminants, including hazardous chemicals and bacteria, mixing with drinking water. Cross connections—an actual or potential connection between a drinking water and non-drinking water supply—are sources of backflow problems.

Residential and commercial property owners should be concerned and diligent about backflow and cross connections. A garden hose can often be a cross connection. Someone spraying an herbicide with a cross connection could have some of the herbicide pulled back into the home plumbing, especially if there is a drop in the water pressure while the garden hose with the herbicide is attached.

The Minnesota Department of Health and American Water Works Association recommend the following precautions:

- Do not submerge hoses in buckets, pools, tubs, or sinks.
- Keep the end of the hose clear of possible contaminants.
- Do not use spray attachments without a backflow prevention device, and attach these devices to threaded faucets. Such devices are inexpensive and available at hardware stores.
- If a plumber is used to install backflow prevention devices, make sure the plumber is licensed to ensure that local codes and manufacturer's recommendations are met.
- Commercial property owners should develop a cross connection plan to minimize the risk of drawing contaminants into uncontaminated areas. Maintain air gaps (vertical separations between an outlet and the flood-level rim of a vessel of at least twice the diameter of the water supply outlet, and at least one inch) between hose outlets and any liquids.

Thanks for doing your part!

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Water...

.....An Essential Part of Our Lives and Our Future!

Water Conservation Measures & Enforcement:

The City of Waconia has adopted enforcement measures related to its Water Conservation Ordinance. Outdoor irrigation is not permitted between the hours of 9 a.m. and 7 p.m. on any day, all year round. In addition, odd/even watering restrictions are also in effect. For instance, if your address is an odd number, you may water (during appropriate hours) on odd numbered calendar days; whereas, if you have an even numbered address, you may water on even numbered calendar days.

Upon discovery of a violation, the violator shall be issued a warning letter that sets forth the violation and shall describe the remedy and fines for future violations. Upon a second violation at the same location, the violator shall be issued a citation with a fine of \$75.00. A third, and subsequent violations at the same location, will result in a \$250.00 fine for each occurrence. Fines will be added to the violator's monthly water utility bill.

These water conservation measures are necessary to protect our natural resources and remain within the City's water usage allocation set by the DNR. Failure to conserve water will result in higher costs for all our residents, so please water responsibly. Questions regarding water conservation measures may be directed to Public Utilities at 442-2615.

Residents with new sod or seed are reminded that they can call or stop down at the Public Services office to obtain a permit that will allow them to water every day for 14 days, but they are still prohibited from watering between the hours of 9:00am and 7:00pm. Water toys or sprinklers that are used for children who are present and actively playing and hoses that are hand held by a person are exceptions to the ordinance.

Watering is NOT permitted between the hours of 9am to 7pm— all year, no exceptions!

LEAKS!... A WASTE OF WATER... AND COSTLY TO YOU!



The best method for determining whether a leak exists is to take actual water meter readings. This method checks the entire internal plumbing system for water leaks. Take a water meter reading just before going to bed or when no one will use any water for several hours. Take another meter reading in the morning before any water is used or after a few hours of non-use. In theory, the two readings should be the same. If they are not and you cannot account for the use by a humidifier, ice cube maker toilet flush, or water softener, you have a leak, and further investigation is recommended.

From our experience, 90 percent of the leaks in residential plumbing systems are found at the toilet tank. Malfunctioning water softeners and humidifiers run a distant second and third. We encourage you to check for a leak. Toilets leak at the bottom of the tank around the flapper plug or at the top of the tank at the overflow tube. To test the flapper plug, carefully remove the lid from the toilet tank and mark the water level in each toilet tank with a pencil. Shut off the water supply to

the toilet. If the water remains on the mark you made for 10 minutes, the flapper plug is not leaking. If the water level drops below the mark you made, the flapper plug is leaking and should be repaired or replaced. The water level in the toilet tank should be at least 1 in. below the top of the overflow tube. If the water level in the toilet tank is at the top of the overflow tube, that is where a leak may be occurring, and the float that controls the water level in the tank should be adjusted so that the water level in the tank is at least 1 in. below the top of the tube. Toilet tank leaks typically result from worn parts or misalignment of some part of the flushing mechanism. Most repairs can be done by an experienced "do-it-yourselfer." If you are not sure you can handle the job, call a plumber. It is important to stop the leak.

Water leaks are costly. A typical toilet leak at today's rates can add \$5,400 to a single water bill. Our information is provided as a courtesy, with hopes of action on your part that may minimize an unnecessary waste of water and expense to you.

Conservation

Conservation is important, even in the land of 10,000 lakes

Despite our seeming abundance of water, conservation is still essential in Minnesota. For example, it is anticipated that in parts of the metropolitan area groundwater levels are dropping much faster than the water can be replenished. In addition, some agricultural regions in Minnesota are especially vulnerable to drought which can affect crop yields and municipal supplies. It's important we use our water wisely. Below are some tips to help you and your family conserve.

The U.S. Environmental Protection Agency's website has great tips about how you can conserve, and save money in the process! Visit it here: <http://www.epa.gov/WaterSense/pubs/fixleak.html>

Some examples of easy things you can do to help conserve water:

- Fix running toilets—they can waste around 200 gallons a day or more.
- Turn the faucet off while brushing your teeth.
- Shower instead of bathe. Taking a bath uses (on average) more water than showering.
- Only run full loads of laundry, and set the washing machine to the correct water level.
- Only run a dishwasher when it's full.
- Use water-efficient appliances (look for the WaterSense label).



For more information on Water Conservation, visit www.awwa.org

Fact or Fiction?
 A typical shower with a non-low flow showerhead uses more water than a bath.
(FICTION: A typical shower uses less water than a bath.)

Water Conservation is Everyone's Responsibility...

Typical Water Use Habits in the Bathroom:

- Teeth Brushing 2 gallons (tap running)
- Hand Washing 2 gallons (tap running)
- Shaving 3-5 gallons (tap running)
- Tub Bathing 36 gallons (full)
- Showering 20-40 gallons (5 gallons per minute)
- Toilet Flushing 5-7 gallons

Water running unused is like connecting the drain to your tap, and those few gallons a minute can add up to a lot of wasted water.

Laundry:

Twenty-five percent of the daily household water use occurs in the kitchen and laundry, with much of the water being wasted.

A clothes washer can use 36-60 gallons per load.
 20 loads=720-1200 gallons

- If your washer has a variable load control, always adjust water levels to fit the size of the load. This saves both water and the energy needed to heat the extra water.
- Remember that clothes get cleaner in soft water and require less detergent and less rinse water.
- When buying a new washing machine, look for models with water or energy saving controls.

Forget watering streets, walks and driveways... they don't grow a thing!

How are water meters read?
 The city uses an automatic meter reading system whereby water meters are read monthly through a drive-by collection system

- **Morning is the best time to water most lawns. Before 9:00 am is the best of all because rising heat later on tends to steal a lot of water by evaporation.**
- **A lush green lawn requires 1 to 1-1/2 inches of water a week.**
- **Avoid watering when it is windy.**
- **Lawns that are frequently aerated absorb water better.**
- **Mulch around shrubs and other plantings so the soil holds moisture longer.**
- **Drive your car onto the lawn before washing it so rinse water can help water the grass.**

How You Can Help Keep Water Clean Reduce Pollution to Lakes and Rivers

Storm water runoff is rainwater that does not infiltrate into the ground, but instead runs off impervious areas (streets, sidewalks, parking lots) and into lakes, rivers and wetlands. It is the leading causes of water pollution in the United States, carrying grease, oil, bacteria, nutrients, sediment and other contaminants straight into our waters. Below are ways you can reduce storm water, and/or the pollutants it might come in contact with. Visit www.cleanwatermn.org for even more ideas!!

1. **Mulch or Compost Leaves and Grass Clippings!**

Grass clipping and leaves located on impervious surfaces such as streets, driveways, and sidewalks, wash away with storm water runoff into nearby lakes, rivers and wetlands via storm drains. They add excess nutrients to the water which results in algae blooms! Help clean streets of grass clippings and leaves and reduce nutrients in lakes. Compost grass clippings and leaves, thus keeping nutrients out of waters AND reduce the need for lawn fertilizers

2. **Keep Storm Drains Clean!**

Storm drains drain to waters without treatment! In addition to keeping them free of leaves and grass clippings, we must also prevent debris, trash and hazardous chemicals (paint, herbicides) from getting into them and washing into lakes and rivers.

3. **Use Phosphorus FREE fertilizers**

If you must use fertilizers on your lawn and garden use phosphorus free. Lawn fertilizers carrying phosphorus have been banned in MN, but garden fertilizers still contain it. Phosphorus washes into streams and lakes with storm water runoff and causes algae blooms. Sweep excess fertilizers away from sidewalks, driveways, streets, and storm drains when finished using and remember the best methods for green lawns are to use mulch and compost and reduce mowing frequency!

[Go Phosphorus Free!](#)

4. **Build a Rain garden**

Rain gardens reduce storm water runoff and associated pollutants and help prevent flooding. A rain garden is a shallow depression garden designed to catch and infiltrate storm water runoff. The plants absorb and breakdown nutrients and pollutants and attract many types of wildlife (birds and butterflies) to your yard increasing the beauty and aesthetics of your yard. Interested in building a rain garden? Learn more at www.bluethumb.org

5. **Get a Rain barrel**

Another method for reducing storm water runoff is to get a rain barrels. Rain barrels catch runoff from your roof, which can later be used to water gardens. Using rainwater helps conserve water and is better for your plants as it does not contain chlorides. Interested in getting a rain barrel! The Carver County [Environmental Center](#) sells them every spring at the best price in the metro area!

6. **Redirect Your Gutter**

If you don't wish to get a rain barrel, you can still redirect your gutters so the water flows onto grass and gardens instead of hard surfaces that go to storm drains.

7. **Fix Car Leaks!**

Those drips from motor oil, break fluid, anti-freeze and other liquids from cars, get washed into our waters so fix them quickly to prevent pollution.

8. **Improve that Septic Systems**

While properly managed septic systems recycle water back into the natural environment, failing systems result in sewage back ups, sewage in the house or surfacing in the yard or ditch. These failing systems are public and wildlife health threats. For more information on septic systems and programs offered by Carver County, visit the [Environmental Services Septic Systems](#) page.

9. **Don't Dump Hazardous Materials**

As said before, drains lead to water bodies. Although the drain from your sinks and bathrooms go to water treatment facilities before entering lakes and rivers, these treatment facilities do not have a capabilities of removing every contaminant from the water. Thus, *READ LABELS* on your household products to see if they are harmful and how to properly dispose of them. The [Environmental Center](#) in Carver County takes many hazardous household materials. Dumping down the drain or on soil leaks these chemicals to surface and groundwater.

10. **Keep or Restore Buffers and Natural Shorelines!**

If own shoreline property, you can greatly improve the water quality simply by leaving a buffer strip of native vegetation near the water. The vegetation acts as a filter, capturing and containing pollutants that otherwise would have ended up in the water. It also serves as habitat for wildlife such as migrating birds.

Many people mow these natural shorelines down, but that leads to water pollution and erosion and loss of property.

11. **Remove Pet Waste**

Although loveable and fuzzy, pets produce waste that can get washed off our lawns and parks and into our waters, and waste carries bacteria. Picking up pet waste is a huge and simple step towards cleaner and healthier waters. You can even get compostable biobags for picking up pet waste with [Biobags!](#) These bags breakdown and can be buried, compost them in your yard away from potential rain and it can act as a fertilizer for your lawn.

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The depositing of garbage or refuse on a public right-of-way or on adjacent private property (i.e. Blowing grass clippings into the street.) **Is a violation of City ordinance and may result in a fine!**



Your Lawn and the Environment



For more information on lawn care

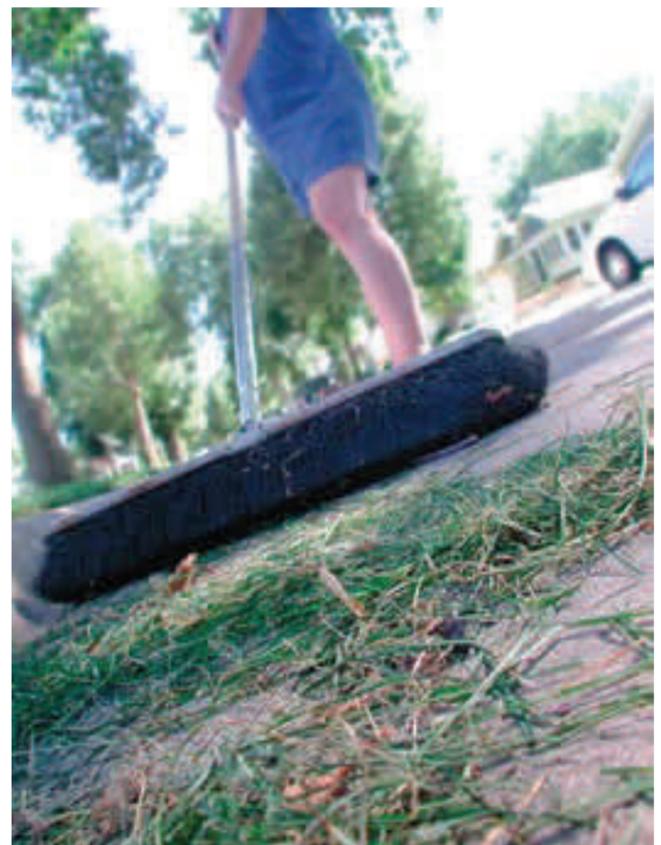
- The **Yard & Garden Line** is the University of Minnesota Extension's one-stop telephone link to information about plants and insects in the home landscape. Call 952-443-1426 or www.extension.umn.edu/gardeninfo.
- **Sustainable lawn maintenance.** University of Minnesota Extension – *Sustainable Urban Landscape Information Series* (SULIS): www.sustland.umn.edu. From the home page, click on "Maintenance" then on "Sustainable Lawn Maintenance."
- **Minnesota's phosphorus law.** Minnesota Department of Agriculture: www.mda.state.mn.us/phoslaw.
- **No-waste lawn.** Minnesota Pollution Control Agency: www.pca.state.mn.us. From the home page, search "lawn and garden".

Sweep it up grass clippings, leaves, or fertilizer left on streets and sidewalks can be a major source of phosphorus pollution in lakes and rivers.

Fertilizers, leaves, grass clippings, animal waste, and eroded soil are all sources of phosphorus. When they are swept or washed into the street or nearest storm drain, they end up in your local lake or river. You can do your part to protect water quality by doing the following:

- Buy phosphorus-free lawn fertilizer.
- Apply fertilizer at the recommended rate. Late summer is the best time. Don't fertilize before a storm. Never apply to frozen ground.
- Keep soil, leaves, and lawn clippings out of the street.
- Mow higher. Keeping your grass length to 2½ – 3 inches is healthier for your lawn.
- Pick up pet waste promptly. Pet waste can contain harmful bacteria as well as nutrients that cause excess algae and weed growth in lakes and rivers.
- Control soil erosion around your house. When left bare, soil is easily washed away with rain, carrying phosphorus with it. Soil erosion can be prevented by keeping soil covered with vegetation or mulch.

The Problem: Too Much GREEN



Green and murky Excess algae and weed growth is a major problem in many Minnesota lakes and waterways. One pound of phosphorus can result in hundreds of pounds of algae.

More phosphorus, fewer fish Too much algae lowers oxygen levels and darkens the water. In severe cases, this can have a devastating effect on fish populations.



What is Xeriscaping?

Many assume that Minnesota, "the land of 10,000 lakes," is inundated with bountiful rainfall. Unfortunately, that isn't generally true. Most lawns and gardens need at least an inch of water every week and there are usually periods where we don't receive adequate rainfall to meet their moisture requirements

Xeriscaping is one way to cut down on water usage while still having a beautiful low-maintenance yard and garden. (Xeros is the Greek work for "dry"). You don't have to make your entire area drought-resistant, but if you place all your thirsty plants in one section, you will concentrate your watering needs and save time as well as water.

Check out the website www.eartheasy.com/grow_xeriscape.htm for more information on xeriscaping and grasscycling



Liatris is an example of a perennial xeriscape planting

Grasscycling?

The simple practice of leaving clippings on the lawn after mowing is called "grasscycling". There are a few tips to successful grasscycling, and when done properly, clippings quickly decompose and return nutrients to the soil naturally.



A Storm water Poo-llution Prevention Program for Dogs & Dog Owners Who Care About Clean Water!



Take the Canines for Clean Water Pledge to pick up after your pet and receive a free bandana for your best friend*!

And

Send us a photo of your "Waconia Canines for Clean Water" wearing the bandana and we'll post the picture on our website!

Send to: pics@waconia.org

**while supplies last*



Fact, dog waste has been declared a "nonpoint source of pollution" by the Environmental Protection Agency (EPA). Believe it or not, this puts dog waste in the same category as oil and toxic chemicals!

Improperly disposed pet waste negatively impacts water quality in lakes, ponds, creeks and the river. Pet waste that decays in lakes depletes oxygen. The lack of oxygen combined with warm temperatures can result in fish kills. Nutrients in pet waste also encourage weed and algae growth further reducing water quality. Algae blooms are stinky and make the water green and ugly which results in fewer recreational users including swimmers, boaters, wind surfers and anglers.

While pet waste isn't the biggest pollutant to our water bodies, it is one of many small sources that add up to a bigger problem. And dog owners can help tackle this bigger problem by picking up after their pets.

Doo your part to make your dog a friend of our fellow walkers, storm water facilities, and the natural environment!

Pledge Cards available at www.waconia.org





A Career in the Water Industry is waiting for **YOU!**

St. Cloud Technical and Community College's Water Environment Technologies (WETT) program provides you with the skills you need to land a great job in this rapidly growing industry.

There are many benefits to this program:

- ▶ Hands-on learning
- ▶ Metro and St. Cloud locations
- ▶ 12 month program
- ▶ 95% placement rates

Call St. Cloud Technical & Community College at 1-320-308-5952 for more information on this career program or e-mail Bill Spain, Instructor: bspain@sctcc.edu or Keith Redmond kredmond@sctcc.edu



The City of Waconia takes pride in providing a high level of water quality and customer service and in having one of the most qualified, experienced and dedicated water plant staffs in Minnesota. Waconia hires only State certified operators and the staff receives extensive training in operations and measurement of water quality.

Please contact us with any questions, concerns or comments

City of Waconia

Public Utilities Department

310 East 10th Street

Waconia, MN 55387

952-442-2615

Email:

publicservices@waconia.org

Website:

www.waconia.org

EPA Safe Drinking Water Hotline

1-800-426-4791

Minnesota Department of Health

651-201-4700