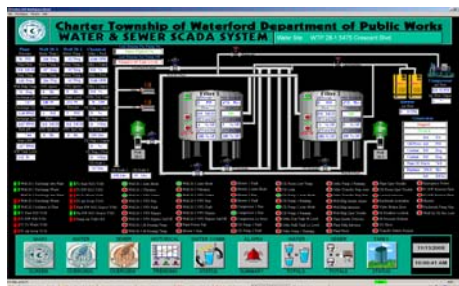


Charter Township of Waterford



Screen Shot of the DPW's Supervisory Control And Data Acquisition System (SCADA). The DPW continuously monitors and alarms on over 1,200 data points.



Multiple Award Winning Water Treatment Plant 31-1 Located at Hess-Hathaway Park on Williams Lake Road.



Nelsey Road Booster Station Project. Completed in Operational Year 2010. The Station elevated water pressure for customers within its service area by an average of 20 PSI.



2016 Annual Water Quality Report Waterford Township Department of Public Works (DPW) Presents The 18th Annual Drinking Water Quality Report

The Waterford Township Department of Public Works (DPW) presents its' eighteenth annual Drinking Water Quality Report! While the Environmental Protection Agency (EPA) and the Michigan Department of Environmental Quality (MDEQ) require water utilities to report the quality of your drinking water, the DPW considers it a priority to inform you, our customers, about the safety of the water you drink and the importance of protecting our water supply. The DPW is also pleased to announce that there was no treatment or monitoring violation for Operational Year 2016. If you have any questions or desire more information about this report or any other subject related to your water quality, please contact Gerald Ward (Water Treatment Foreman), Phone: 248-618-7483 Fax: 248-674-8658, or Email: gward@waterfordmi.gov

Sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. The DPW utilizes wells to provide drinking water. As water travels over land surface 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. 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 EPA's Safe Drinking Water Hotline at (800-426-4791) or by visiting their website at www.epa.gov/safewater.

Where does my drinking water come from?

The Township's water supply is obtained from nineteen (19) wells located at eleven (11) different locations throughout Waterford Township. The water is treated through a variety of processes including iron removal at eleven (11) Water Treatment Plants located throughout the Township. Chlorine gas is added for disinfection and Ortho-Phosphate for corrosion control, protecting pipes from leaching lead and copper into the drinking water. In order to ensure that tap water is safe to drink, the EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) establishes limits for contaminants in bottled water.

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.
- **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.
- **Pesticides and Herbicides**, which may come from a variety of sources such as agricultural and residential uses.
- **Radioactive contaminants**, which are naturally occurring or be the result of oil and gas production and mining activities.

What contaminants are in my water?

The following is a list of some common contaminants and their associated health effects when the Maximum Contaminant Level (MCL) is exceeded. If a particular MCL or Action Level (AL) is exceeded, additional treatment or other action may be required. However, the Township's water falls below the MCL's and AL's for these and all other parameters monitored.

Copper: Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short period of time may experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's disease should consult their personal physician.

Fluoride: Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Children may get mottled teeth. The DPW treatment process does not add Fluoride to its finished water. However, fluoride occurs naturally in ground water. Please refer to the data table on the last page for the levels of fluoride observed in our most recent tests. Please consult with your health care provider for fluoride supplement recommendations.

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 DPW 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. Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure. 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>. Additional information is available from the Safe Drinking Water Hotline at (800-426-4791).

Arsenic: Used in the manufacturing of pesticides, metal products, pigments and dyes, and medicine, arsenic is a naturally occurring element in our environment and can be found in groundwater. While a known carcinogen, the health effects of arsenic depend on the amount consumed. The current MCL for arsenic is 10ppb, which was lowered from 50ppb by the EPA. In operational year 2016, Township water met or exceeded the new stringent arsenic criteria. Please visit the EPA's Website for more information about arsenic at <https://nepis.epa.gov/Exe/ZyPdf.cgi?Dockey=20001XXE.txt>. 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 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.

Nitrate: Nitrate is formed when oxygen in the air or dissolved with water combines with nitrogen. While nitrate is naturally occurring, concentrations can rise from septic tank leachate and fertilizers, which are rich in nitrogen. Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome. The MCL for nitrate is 10ppm and Township water was not detected to have any nitrates above the MCL for the samples taken in Operational Year 2016.

TTHMs and HAA5: Total Trihalomethanes (TTHM's) and Haloacetic Acid (HAA5) are a group of chemicals that are formed along with other disinfection by-products when chlorine or other disinfectants used to control microbial contaminants in drinking water react with naturally occurring organic and inorganic material in water.

Unregulated Contaminants: Unregulated contaminants are those for which USEPA has not established drinking water standards. Monitoring helps USEPA determine where certain contaminants occur and whether it needs to regulate those contaminants. We monitored for these contaminants and results of monitoring are available upon request.

Waterford Township Wellhead Protection



Since Waterford's source water is derived from wells, it is in the community's best interest to safeguard the resource. Part of this protection includes the Township's development of eleven (11) Well Head Protection Areas (WHPA), which have been approved by the Michigan Department of Environmental Quality. These areas define the boundaries of the 10-year zone of capture for a specific wellhead. If untreated, a contaminant release at the edge of the boundary would, theoretically, take approximately 10 years to reach the wellhead. As a result, this powerful analytical tool allows for the development of an action plan to resolve the problem before the wellhead would become contaminated. The Township wells range in susceptibility from moderately low to high as defined by the Source Water Assessment Report. A copy of the Source Water Assessment can be obtained by contacting the DPW at 248-674-2278

Education is a major component of the Program. This includes:

- Informational road signs placed throughout the township. Look for these signs around our community wherever main roads intersect wellhead protection areas.
- Classroom demonstrations in Waterford Schools.
- Promotional movie trailer currently running at Waterford MJR Cinemas.
- Informational booths at community civic events.

Please remember, you can do your part by disposing of contaminants properly, as well as reporting spills and dumping. For more information on this topic please feel free to contact Daniel Stickel, PE, DPW Engineering Superintendent at: 248-618-7451.

Frequently Asked Questions (F.A.Q.'s)

Do I need to take special precautions with my drinking water?

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 disorders, some elderly, and infants can be particularly at risk for infection. These people should seek advice about drinking water from their health care providers. EPA/Center for Disease Control (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 (800-426-4791) or on their website at www.epa.gov/safewater. The Water Quality Data Table on the last page of this report lists all of the drinking water contaminants that were detected during the calendar year of this report. Additionally, the second and third pages of this report break down possible contaminants in your water and the methods the DPW uses to protect the water supply. The presence of these possible contaminants in the water does not necessarily indicate that the water poses a health risk.

Does the Township recommend a water softener?

While DPW treatment facilities substantially remove iron from the water, hardness remains and water softeners are recommended. Water hardness realized by property owners will vary depending on the source of ground water utilized at a treatment facility in a given area. We suggest customers set their water softener units at 18 grains initially and subsequently adjust as necessary. In operational year 2016, the average grains per gallon were 19.39 based on sampling. Please feel free to call the Water Treatment Branch at: 248.618.7483 for individual settings for your water softener.



What should I know about hydrant flushing?

Fire hydrant flushing is conducted to improve water quality and is conducted in the spring and fall of each year as necessary. The DPW conducts hydrant flushing at night to minimize service interruption and inconvenience to customers. However, it is not uncommon to experience rusty looking water immediately following flushing. This condition should clear up shortly after flushing.

Is there an easier way to pay my water/sewer bill or access my utility account?

The DPW offers customers the convenience of paying their water and sewer bills via auto-debit from their checking or savings accounts. Please visit the DPW website for enrollment forms. The DPW also offers customers the convenience of viewing their account status, as well as the option of paying their water and sewer utility bills online with a credit card 24 hours a day. The account viewing service is free of charge and available 24 hours a day. A convenience charge of \$4.95 is applied by the 3rd party processing company for credit card payments. Please visit the DPW web site at: <http://waterfordmi.gov/264/Water-Sewer-Bill>

Did you know?

- The Township has approximately 350 miles of water main that are operated and maintained by the DPW.
- The DPW is somewhat unique in Southeastern Michigan in that it is responsible for the pumping, treatment and distribution of drinking water to its approximately 24,600 water accounts. Most of Southeastern Michigan is served by the Great Lakes Water Authority (GLWA).
- The Township water system has 3,644 Fire Hydrants that are serviced and maintained by the DPW.
- The DPW is deploying a radio based Fixed Network (FN) Meter Reading System. Meter Readings and alerts in this system are sent to the DPW without the need to enter customer's property.

2016 WATER QUALITY DATA TABLE

Per MDEQ and/or EPA monitoring requirements, contaminant-monitoring schedules vary and can exceed calendar years in collection and testing frequency.
Unless otherwise noted, the data presented in this table is from testing done in the calendar year 2016.

	Testing Violations	Testing Date(s)	MCLG	MCL	Your Water	Sample Range	Major Sources in Drinking Water
Inorganic Contaminants:							
Flouride (ppm)	NO	2016	4	4	0.42	0 to 0.64	Erosion of natural deposits and discharge from fertilizer and aluminum factories.
Arsenic (ppm)	NO	2016	N/A	10	*3.8	0.00 to 8.00	Used in agricultural production and naturally found in the environment.
Barium (ppm)	NO	2015	2	2	0.185	0.18 to 0.24	Discharge of drilling wastes and metal refineries as well as erosion of natural deposits.
Radioactive Contaminants:							
Combined Radium (pCi/L)	NO	2010	0	5	1.30	N/A	Erosion of natural deposits.
Gross Alpha (pCi/L)	NO	2015	0	15	5.16	3.49 to 7.26	Erosion of natural deposits.
Organic Contaminants:							
TTHM Total Trihalomethane (Distribution System) (ppb)	NO	2016	N/A	80	*15.8	10.3 to 21.3	By-product of drinking water disinfection
HAA5 Total Haloacetic Acid (Distribution System) (ppb)	NO	2016	N/A	60	*4.00	3.00 to 5.00	By-product of drinking water disinfection
2008 Microbial Contaminants - Monthly Monitoring in the Distribution System							
Total Coliform Bacteria	NO	2016	0	>5% of monthly		Highest no. detected In one month = 0	Major Sources in Drinking Water Naturally Present in the Environment. No violation in 2015.
E. Coli (fecal) Coliform Bacteria	NO	2016	0			In one year = 0	Human waste and animal fecal waste. No violation in 2015.
Special Monitoring of Contaminants							
			MRDLG	MRDL	Your Water	Sample Range	
Sodium (ppm)	NO	2016	NA	NA	60.83	10 to 124	Erosion of natural deposits.
Chlorine (ppm)	NO	2016	4	4	2	0.0 to 2.0	Water additive used to control microbes.
Copper/Lead							
			MCLG	AL	90th%	Sites above AL	Major Sources in Drinking Water
Copper (ppm)	NO	2014	1.3	1.3	1.2 ppm	1 out of 30 sites	Corrosion of household plumbing systems, erosion of natural deposits, leaching from wood preservatives
Lead (ppb)	NO	2014	0	15	4.8 ppb	2 out of 60 sites	Corrosion of household plumbing systems and erosion of natural deposits.
Unregulated Contaminants:							
				RDL	Your Water	Sample Range	Major Sources in Drinking Water
Molybdenum (ug/L)	N/A	2013		1.0	6.95	5.80 to 8.20	Erosion of natural deposits
Strontium (ug/L)	N/A	2013		0.3	359.9	337.20 to 409.40	Erosion of natural deposits
Chromium (ug/L)	N/A	2013		0.0	0.05	0.00 to 0.20	Erosion of natural deposits
Cobalt (ug/L)	N/A	2013		1.0	0.00	None Detected	Erosion of natural deposits
Vanadium (ug/L)	N/A	2013		0.2	0.00	None Detected	Erosion of natural deposits
Chromium (VI) (ug/L)	N/A	2013		0.2	0.00	None Detected	Erosion of natural deposits
Chlorate (ug/L)	N/A	2013		20.0	0.00	None Detected	Erosion of natural deposits

Terms and Abbreviations

*Indicates an annual average calculation

Your Water: the highest single value obtained during the reporting period unless noted with an *

Sample Range: The lowest to the highest values obtained.

MRDLG: The level of a drinking water disinfectant below which there is no expected health risk.

MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

N/A: Not Applicable **ppb:** Parts per Billion **ppm:** Parts per Million **pCi/L:** Picocuries per liter (a measure of radioactivity).

RAA: Running Annual Average Calculation.

MCLG: The Maximum Contaminant Level Goal is the level below which there are no known health risks. MCLGs allow for a margin of safety.

MCL: The Maximum Contaminant Level is the highest level of contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

AL: The action level is the concentration of contaminant which, if exceeded, requires treatment.

90th Percentile: 90% of the homes tested have lead/copper levels at or below the 90th percentile value

MRDL: The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

RDL: The Reporting Detection Limit. This is the maximum detectable limit for reporting the presence of this chemical.