



The City of Farmington
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2018 Annual Drinking Water Quality Report July 2019

The City of Farmington operates and maintains its water supply system. Title XIV of the United States Public Health Service Act (Chapter 373.88 Stat 1660), popularly known as The Safe Drinking Water Act, and the Michigan Safe Drinking Water Act (1976 PA399, amended to 1998 PA56) require a water supplier to provide to its customers Consumer Confidence Reports (CCR).

This report is designed to inform you about the water quality and services 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 to protect our water sources. We are committed to ensuring the quality of our water. Our water is from one source, surface water from the Detroit River Belle Isle intakes via the Springwells Water Treatment Plant. We purchase the water from the Great Lakes Water Authority.

We're pleased to report that our drinking water is safe and meets federal and state requirements. If you have any questions about this report or concerns about our water quality, please contact Charles Eudy, Superintendent of Public Works at (248) 473-7250. We want our valued customers to be informed about their water quality.

System Design and Improvements

We work continually to provide high quality water to every tap. In order to maintain a safe and dependable water supply, we sometimes need to make improvements that will benefit all customers. These improvements are sometimes reflected as rate structure adjustments. 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.

While using our 2014 Water Reliability Study, the City can evaluate current and future water demands for proposed redevelopments within the community.

Since 2013 the City has installed approximately 2200 radio transmitting water meters which aide in accurate accounting of water usage and can detect leaks in residential and commercial dwellings.

Improvements to the one million gallon water ground storage tank were completed in 2018. These improvements included exterior high pressure power-washing, three (3) coat epoxy urethane paint system to the walls and a four (4) coat epoxy system to the roof. Structural modifications/improvements included a 30 inch sidewall manway, overflow flap gate, cable type fall prevention device, step-off platform, frost-free roof vent, and cathodic protection system have been added to the interior of the reservoir to reduce corrosion of the interior of the reservoir.

Three (3) new fire hydrants were installed, 7 valves, and 200 feet of water main were replaced.

Six (6) Fire Hydrants were repaired and one was replaced following the annual winterization inspection.

Five employees maintain Water Distribution certification.

These types of projects and staff training continue to improve the reliability and capacity of our system.

Background Information

All 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. These substances can be microbes, inorganic or organic chemicals, pesticides, herbicides and radioactive substances. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at (800) 426-4791.

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.

People with Special Health Concerns

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 (800) 426-4791.

Your Water Quality

The City of Farmington water system is routinely monitored for contaminants in your drinking water in accordance with the Public Acts. The following tables show the results of our monitoring for the period of January 1 to December 31, 2018. In addition, other test results are shown for the year they were required. The most recent test date is listed in the table. Remember, the presence of some elements does not necessarily pose a health risk.

Maximum Contaminant Level (MCL) is the highest level of a contaminant that is allowed in drinking water and set at a very stringent level. To understand the possible health effects described from many regulated elements, a person would have to drink two 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.

We're proud that your drinking water meets or exceeds all federal and state requirements. The EPA has determined that your water IS SAFE at the levels detected.

Public comments on this report may be made at any City Council meeting. City Council meetings are scheduled for 7:00 pm on the third Monday of each month.

Detroit River Intakes Source Water Assessment

Your source water comes from the Detroit River, situated within the Lake St. Clair, Clinton River, Detroit River, Rouge River, Ecorse River, watersheds in the U.S. and parts of the Thames River, Little River, Turkey Creek and Sydenham watersheds in Canada. The Michigan Department of Environmental Quality in partnership with the U.S. Geological Survey, the Great Lakes Water Authority (GLWA), and the Michigan Public Health Institute performed a source water assessment in 2004 to determine the susceptibility of potential contamination. The susceptibility rating is on a seven-tiered scale from "very low" to "very high" based primarily on geologic sensitivity, water chemistry, and contaminant sources. The susceptibility of our Detroit River source water intakes were determined to be highly susceptible to potential contamination. However, all four GLWA water treatment plants that use source water from Detroit River have historically provided satisfactory treatment of this source water to meet drinking water standards.

GLWA has initiated source-water protection activities that include chemical containment, spill response, and a mercury reduction program. GLWA participates in a National Pollutant Discharge Elimination System permit discharge program and has an emergency response management plan. In 2016 the Michigan Department of Environmental Quality approved the GLWA Surface Water Intake Protection Program plan. The program includes seven elements that include the following: roles and duties of government units and water supply agencies, delineation of a source water protection area, identification of potential sources of contamination, management approaches for protection, contingency plans, siting of new sources, public participation and education. If you would like to know more information about this report or a complete copy of this report, please contact your water department at (248) 473-7250.

Springwells Water Treatment Plant 2018 Regulated Detected Contaminants Tables

Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Allowed Level MCL	Highest Level Detected	Range of Detection	Violation	Major Sources in Drinking Water
2018 Inorganic Chemicals – Monitoring at Plant Finished Water Tap								
Fluoride	6/12/2018	ppm	4	4	0.67	n/a	no	Erosion of natural deposits; Water additive, which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate	6/12/2018	ppm	10	10	0.34	n/a	no	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Barium	5/16/2017	ppm	2	2	0.01	n/a	no	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
2018 Disinfection By-Products – Monitoring in Distribution System Stage 2								
Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Allowed Level MCL	Highest Level LRAA	Range of Detection	Violation	Major Sources in Drinking Water
Total Trihalomethanes (TTHM)	2018	ppb	n/a	80	33.1	21.4-46	no	By-product of drinking water chlorination
Haloacetic Acids (HAA5)	2018	ppb	n/a	60	13.5	11-15	no	By-product of drinking water disinfection

TTHM

MCL/AL	2018			
80 ppb	1 Qtr.	2 Qtr.	3 Qtr.	4 Qtr.
DPB 3	21.4 ppb	31 ppb	46 ppb	34 ppb
DBP 4	Sample period ended for this location			

HAA5

MCL/AL	2018			
60 ppb	1 Qtr.	2 Qtr.	3 Qtr.	4 Qtr.
DPB 3	11 ppb	14 ppb	14 ppb	15 ppb
DBP 4	Sample period ended for this location			

2018 Disinfectant Residuals – Monitoring in Distribution System by Treatment Plant								
Regulated Contaminant	Test Date	Unit	Health Goal MRDGL	Allowed Level MRDL	Highest Level RAA	Range of Detection	Violation	Major Sources in Drinking Water
Total Chlorine residual	Jan.-Dec. 2018	ppm	4	4	0.68	0.63-0.69	no	Water additive used to control microbes

2018 Turbidity – Monitored every 4 hours at Plant Finished Water Tap			
Highest Single Measurement Cannot exceed 1 NTU	Lowest Monthly % of Samples Meeting Turbidity Limit of 0.3 NTU (minimum 95%)	Violation	Major Sources in Drinking Water
0.25 NTU	100%	No	Soil Runoff
Turbidity is a measure of the cloudiness of water. We monitor it because it is a good indicator of the effectiveness of our filtration system.			

2018 Microbiological Contaminants – Monthly Monitoring in Distribution System					
Regulated Contaminant	MCLG	MCL	Highest Number Detected	Violation yes/no	Major Sources in Drinking Water
Total Coliform Bacteria	0	Presence of Coliform bacteria > 5% of monthly samples	in one month - 0	No	Naturally present in the environment.
<i>E.coli</i> or Fecal Coliform Bacteria	0	A routine sample and a repeat sample are total coliform positive, and one is also fecal or <i>E.coli</i> positive.	entire year - 0	No	Human waste and animal fecal waste.

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 organics, 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.

2017 Lead and Copper Monitoring at Customers' Tap								
Regulated Contaminant	Test Date	Units	Health Goal MCLG	Action Level AL	90th Percentile Value*	Number of Samples over AL	Violation yes/no	Major Sources in Drinking Water
Lead	2017	ppb	0	15	0.0	0	No	Corrosion of household plumbing system; Erosion of natural deposits.
Copper	2017	ppm	1.3	1.3	0.0	0	No	Corrosion of household plumbing system; Erosion of natural deposits; Leaching from wood preservatives.
*The 90th percentile value means 90 percent of the homes tested have lead and copper levels below the given 90th percentile value. If the 90th percentile value is above the AL additional requirements must be met.								

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 Farmington 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) or at <http://www.epa.gov/safewater/lead>.

Contaminant	2018 Treatment Technique	Typical Source of Contaminant
Total Organic Carbon (ppm)	The Total Organic Carbon (TOC) removal ratio is calculated as the ratio between the actual TOC removal and the TOC removal requirements. The TOC was measured each quarter and because the level was low, there is no requirement for TOC removal.	Erosion of natural deposits

2018 Special Monitoring

Contaminant	MCLG	MCL	Level Detected	Source of Contamination
Sodium (ppm)	n/a	n/a	6.00	Erosion of natural deposits

Collection and sampling result information in the table provided by Great Lakes Water Authority (GLWA) Water Quality Division ML Semegen

GLWA voluntarily monitors for Cryptosporidium and Giardia in our untreated source water monthly. The March 2018 untreated water samples collected from the Belle Isle intake indicated the presence of one Giardia cyst. All other samples collected from the Belle Isle intake in the year 2018 were absent for the presence of Cryptosporidium and Giardia. Systems using surface water like GLWA must provide treatment so that 99.9 percent of Giardia lamblia is removed or inactivated.

UCMR 3

Contaminant	Test Date	MCGL	MCL	Range of Detection SE 1	Highest Level Detected SE 1	Range of Detection SE 2	Highest Level Detected SE 2	Source of Contamination
Chromium (ppb)	2015	NA	NA	< 0.2-0.3	0.3	< 0.2	0.3	Naturally-occurring element; used in making steel and other alloys. Chromium-3 or -6 forms are used for chrome plating, dyes and pigments, leather tanning, and wood preservation.
Chromium, -6(ppb)	2015	NA	NA	0.12	0.20	0.16-0.25	0.25	Naturally-occurring element; used in making steel and other alloys. Chromium-3 or -6 forms are used for chrome plating, dyes and pigments, leather tanning, and wood preservation.
Strontium (ppb)	2015	NA	NA	98-99	99	97-100	100	Naturally-occurring element; historically, commercial use of Strontium has been in the faceplate glass of cathode-ray tube television to block x-ray emissions.
Vanadium (ppb)	2015	NA	NA	< 0.2-0.5	0.5	< 0.2-0.5	0.25	Naturally-occurring element metal; used as vanadium pentoxide which is a chemical intermediate and a catalyst.

The Third Unregulated Contaminant Monitoring Rule (UCMR 3)

What is the Unregulated Contaminant Monitoring Rule?

The 1996 amendments to the Safe Drinking Water Act (SDWA) require that once every five years, the U.S. Environmental Protection Agency (EPA) issue a new list of no more than 30 unregulated contaminants to be monitored by public water systems (PWSs). The Unregulated Contaminant Monitoring Rule (UCMR) provides EPA and other interested parties with scientifically valid data on the occurrence of contaminants in drinking water. These data serve as a primary source of occurrence and exposure information that the agency uses to develop regulatory decisions.

The final rule "Revisions to the Unregulated Contaminant Monitoring Rule (UCMR 3) for Public Water Systems" was published in the *Federal Register* on May 2, 2012 (77 FR 26072). UCMR 3 monitoring will take place from 2013-2015, and includes monitoring for 28 chemicals and two viruses. For more information please refer to the City of Farmington's website: www.farmgov.com

In order to ensure that tap water is safe to drink, 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.

Cross Connection Control Program

The Michigan Department of Environmental Quality (DEQ) approved City of Farmington Cross Connection Control Program (CCCP). A cross connection is a connection that could allow backflow/back siphon of nonpotable water or pollutants into the public drinking water supply. The CCCP helps prevent contamination protecting the quality of the water system, the safety and public health of all water customers.

CITY OF FARMINGTON OUTSIDE WATER RESTRICTIONS

Time		Commercial Lawn Irrigation Automated	Residential Lawn Irrigation Automated	Residential Lawn Irrigation Manual	Residential Garden Irrigation Automated	Residential Garden Irrigation Manual
FROM	TO					
Odd-Even Restriction		Yes	No	No	No	No
Midnight	6:00 a.m.	Not Prohibited	Not Prohibited	Not Prohibited	Not Prohibited	Not Prohibited
6:00 a.m.	11:00 a.m.	Prohibited	Prohibited	Not encouraged	Not encouraged	Not encouraged
11:00 a.m.	7:00 p.m.	Not encouraged	Not encouraged	Not encouraged	Not encouraged	Not encouraged
7:00 p.m.	10:00 p.m.	Prohibited	Prohibited	Not encouraged	Not encouraged	Not encouraged
10:00 p.m.	Midnight	Not Prohibited	Not Prohibited	Not Prohibited	Not Prohibited	Not Prohibited

2018 Key to the Detected Contaminant Tables

Symbol	Abbreviation for	Definition/Explanation
>	Greater than	
°C	Celsius	A scale of temperature in which water freezes at 0° and boils at 100° under standard conditions.
AL	Action Level	The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements which a water system must follow.
HAA5	Haloacetic Acids	HAA5 is the total of bromoacetic, chloroacetic, dibromoacetic, dichloroacetic, and trichloroacetic acids. Compliance is based on the total.
Level 1	Level 1 Assessment	A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in the water system.
Level 2	Level 2 Assessment	A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an E. coli MCL violation occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.
LRAA	Locational Running Annual Average	The average of analytical results for samples at a particular monitoring location during the previous four quarters.
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.
MCLG	Maximum Contaminant Level Goal	The level of contaminant in drinking water below which there is no known or expected risk to health.
mg/L	Milligrams per liter	A milligram = 1/1000 gram 1 milligram per liter is equal to 1 ppm
MRDL	Maximum Residual Disinfectant Level	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.
MRDLG	Maximum Residual Disinfectant Level Goal	The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.
n/a	not applicable	
ND	Not Detected	
NTU	Nephelometric Turbidity Units	Measures the cloudiness of water.
pCi/L	Picocuries Per Liter	A measure of radioactivity. Picocurie (pCi) means the quantity of radioactive material producing 2.22 nuclear transformations per minute.
ppb	Parts Per Billion (one in one billion)	The ppb is equivalent to micrograms per liter. A microgram = 1/1000 milligram.
ppm	Parts Per Million (one in one million)	The ppm is equivalent to milligrams per liter. A milligram = 1/1000 gram.
RAA	Running Annual Average	The average of analytical results for all samples during the previous four quarters.
TT	Treatment Technique	A required process intended to reduce the level of a contaminant in drinking water.
TTHM	Total Trihalomethanes	Total Trihalomethanes is the sum of chloroform, bromodichloromethane, dibromochloromethane and bromoform. Compliance is based on the total.
µmhos	Micromhos	Measure of electrical conductance of water



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ATTENTION: THIS IS AN IMPORTANT REPORT ON WATER QUALITY AND SAFETY.