

# City of Plymouth

## 2014 Consumer Confidence Report & Annual Water Quality Report

The City of Plymouth is pleased to inform you that in 2014, we have surpassed the water quality standards required by the U.S. Environmental Protection Agency (EPA) and the State of Michigan's Department of Environmental Quality (MDEQ). The 2014 Annual Water Quality Report describes the source of our water, lists our test results, and contains important information about water and health. This report is intended to provide consumers an understanding of drinking water and to heighten awareness of the need to protect our precious water resources.

We hope this report addresses any drinking water quality concerns you might have. Additional information can be found on the Detroit Water and Sewerage Department website [www.dwsd.org](http://www.dwsd.org) and on the EPA's website; Water on Tap: Consumer's Guide to the Nation's Drinking Water at [www.epa.gov/safewater](http://www.epa.gov/safewater).

### **Sources of your drinking water:**

Your source water comes from the Detroit River, situated within the Lake St. Clair, Clinton River, Detroit River, Rouge River, Ecorse River, 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 Detroit Water and Sewerage Department, 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 Detroit water treatment plants that use source water from Detroit River have historically provided satisfactory treatment of this source water to meet drinking water standards.

DWSD has initiated source-water protection activities that include chemical containment, spill response, and a mercury reduction program. DWSD participates in a National Pollutant Discharge Elimination System permit discharge program and has an emergency response management plan. If you would like to know more information about this report or a complete copy of this report please, contact the City of Plymouth Municipal Services Department at (734) 453-7737.

Your source water may also come from the lower Lake Huron watershed. The watershed includes numerous short, seasonal streams that drain to Lake Huron. The Michigan Department of Environmental Quality in partnership with the U.S. Geological Survey, the Detroit Water and Sewerage Department, and the Michigan Public Health Institute performed a source water assessment in 2004 to determine the susceptibility of potential contamination. The susceptibility rating is a seven-tiered scale ranging from "very low" to "very high" based primarily on geologic sensitivity, water chemistry, and contaminant sources. The Lake Huron source water intake is categorized as having a moderately low susceptibility to potential contaminant sources. The Lake Huron water treatment plant has historically provided satisfactory treatment of this source water to meet drinking water standards. If you would like to know more information about this report or a complete copy of this report please, contact the City of Plymouth Municipal Services Department at (734) 453-7737.

## **Contaminants and their presence in 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 at (800-426-4791).

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, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm water 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.

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.

## **Vulnerability of sub-populations:**

Some people may be more vulnerable to contaminants in drinking water than is 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 (800-426-4791).

## **Information about the presence of 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 City of Plymouth Department of Municipal Services 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>.

Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the Safe Drinking Water Hotline (800-426-4791).

### Water Quality Data:

The following table lists all the drinking water contaminants detected during calendar year 2014. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in this table is from testing done from January 1, 2014 to December 31, 2014.

#### KEY TO THE DETECTED CONTAMINANTS TABLE

Symbol	Abbreviation	Definition/Explanation
>	<b>Greater than</b>	
AL	<b>Action Level</b>	<b>The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements which a water system must follow.</b>
HAA5	<b>Haloacetic Acids</b>	<b>HAA5 is the total of bromoacetic, chloroacetic, dibromoacetic, dichloroacetic, and trichloroacetic acids. Compliance is based on the total.</b>
LRAA	<b>Locational Running Annual Average</b>	
MCL	<b>Maximum Contaminant Level</b>	<b>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.</b>
MCLG	<b>Maximum Contaminant Level Goal</b>	<b>The level of contaminant in drinking water below which there is no known or expected risk to health.</b>
mg/L	<b>Milligrams per liter</b>	<b>A milligram = 1/1000 gram  1 milligrams per liter is equal to 1 ppm</b>
MRDL	<b>Maximum Residual Disinfectant Level</b>	<b>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.</b>

MRDLG	<b>Maximum Residual Disinfectant Level Goal</b>	The level of a drinking water disinfectant below which there is no known or expected risk to health. MRLDG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.
n/a	<b>Not Applicable</b>	
NTU	<b>Nephelometric Turbidity Units</b>	Measures the cloudiness of water.
pCi/L	<b>Picocuries Per Liter</b>	A measure of radioactivity. Picocurie (pCi) means the quantity of radioactive material producing 2.22 nuclear transformations per minute.
ppb	<b>Parts Per Billion (one in one billion)</b>	The ppb is equivalent to micrograms per liter.  A microgram = 1/1000 milligram.
ppm	<b>Parts Per Million (one in one million)</b>	The ppm is equivalent to milligrams per liter.  A milligram = 1/1000 gram.
RAA	<b>Running Annual Average</b>	
TT	<b>Treatment Technique</b>	A required process intended to reduce the level of a contaminant in drinking water.
TTHM	<b>Total Trihalomethanes</b>	Total Trihalomethanes is the sum of chloroform, bromodichloromethane, dibromochloromethane and bromoform. Compliance is based on the total.

**Springwells Water Treatment Plant  
2014 Regulated Detected Contaminants Tables**

Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Allowed Level MCL	Highest Level Detected	Range of Detection	Violation yes/no	Major Sources in Drinking Water
<b>Inorganic Chemicals – Monitoring at Plant Finished Water Tap</b>								
Fluoride	5/13/14	ppm	4	4	0.61	n/a	no	Erosion of natural deposits; Water additive, which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate	5/13/14	ppm	10	10	0.39	n/a	no	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.

<b>Disinfection By-Products – Monitoring in Distribution System Stage 2 Disinfection By-Products</b>								
Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Allowed Level MCL	Highest LRAA	Range of Detection	Violation yes/no	Major Sources in Drinking Water
Total Trihalomethanes (TTHM)	2014	ppb	n/a	80	n/a	36-37	no	By-product of drinking water chlorination
Haloacetic Acids (HAA5)	2014	ppb	n/a	60	n/a	13-17	no	By-product of drinking water disinfection

<b>Disinfectant Residuals – Monitoring in Distribution System</b>								
Regulated Contaminant	Test Date	Unit	Health Goal MRDLG	Allowed Level MRDL	Highest RAA	Range of Detection	Violation yes/no	Major Sources in Drinking Water
Total Chlorine Residual	2014	ppm	4	4	0.70	0.64-0.74	no	Water additive used to control microbes

<b>2014 Turbidity – Monitored every 4 hours at Plant Finished Water Tap</b>			
Highest Single Measurement Cannot exceed 1 NTU	Lowest Monthly % of Samples Meeting Turbidity Limit of 0.3 NTU (minimum 95%)	Violation yes/no	Major Sources in Drinking Water
0.24 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.			

<b>2014 Microbiological Contaminants – Monthly Monitoring in Distribution System</b>					
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	0	no	Naturally present in the environment.
E.coli Bacteria	0	A routine sample and a repeat sample are total coliform positive, and one is also fecal or E.coli positive.	0	no	Human waste and animal fecal waste.

**Springwells Water Treatment Plant  
2014 Regulated Detected Contaminants Tables  
(Continued)**

<b>2014 Lead and Copper Monitoring at Customers' Tap</b>								
<b>Regulated Contaminant</b>	<b>Test Date</b>	<b>Unit</b>	<b>Health Goal MCLG</b>	<b>Action Level AL</b>	<b>90<sup>th</sup> Percentile Value*</b>	<b>Number of Samples over AL</b>	<b>Violation yes/no</b>	<b>Major Sources in Drinking Water</b>
<b>Lead</b>	<b>2014</b>	<b>ppb</b>	<b>0</b>	<b>15</b>	<b>0</b>	<b>0</b>	<b>no</b>	Corrosion of household plumbing system; Erosion of natural deposits.
<b>Copper</b>	<b>2014</b>	<b>ppm</b>	<b>1.3</b>	<b>1.3</b>	<b>.024</b>	<b>0</b>	<b>no</b>	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.

<b>Regulated Contaminant</b>	<b>Treatment Technique</b>	<b>Typical Source of Contaminant</b>
<b>Total Organic Carbon (ppm)</b>	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 TOC removal requirement.	Erosion of natural deposits

**2014 Special Monitoring**

<b>Contaminant</b>	<b>MCLG</b>	<b>MCL</b>	<b>Level Detected</b>	<b>Source of Contamination</b>
<b>Sodium (ppm)</b>	<b>n/a</b>	<b>n/a</b>	<b>5.15</b>	Erosion of natural deposits

Collection and sampling result information in the table provided by Detroit Water and Sewerage Department (DWSD) Water Quality, ML Semegen