

# 2016 Water Quality Report

## Dear Lincoln Park Water Customer:

Drinking water quality is important to our community and the region. The City of Lincoln Park and the Great Lakes Water Authority (GLWA) are committed to meeting state and federal water quality standards including the Lead and Copper Rule. With the Great Lakes as our water source and proven treatment technologies, the GLWA consistently delivers safe drinking water to our community. The City of Lincoln Park operates the system of water mains that carry this water to your home's service line. This year's Water Quality Report highlights the performance of GLWA and The City of Lincoln Park's water professionals in delivering some of the nation's best drinking water. Together, we remain committed to protecting public health and maintaining open communication with the public about our drinking water.

The Lincoln Park Water and Sewer Department is a division of the Department of Public Services. The responsibility for the water distribution lies with John Kozuh, Director of Public Services, Ronald Rail, Field Supervisor, and Julie Ciochon, Clerk for Public Services. Currently the City has 8 full-time employees dedicated to the water & sewer field operations. The Water Office, which is located in City Hall at Southfield Road and Fort Park Street, handles all billing matters.

The Department of Public Services strives to deliver the highest quality of drinking water to our residents while minimizing any disruption in service. If you have any questions concerning this report or any other water related items, please feel free to contact the Department of Public Services at 313-386-9000.

## Lincoln Park Water Sources

Your source water comes from the Detroit River, situated within the Lake St. Clair, and several watersheds within the U.S. and Canada. The Michigan Department of Environmental Quality in partnership with the Detroit Water and Sewerage Department and several other governmental agencies performed a source water assessment in 2004 to determine the susceptibility or relative potential of contamination. The susceptibility rating is on a seven-tiered scale from "very low" to "very high" based primarily on geologic sensitivity, water chemistry, and contamination 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 the Detroit River have historically provided satisfactory treatment of this source water to meet drinking water standards.

GLWA initiated source-water protection activities that include chemical containment, spill response, and a mercury reduction program. GLWA participates in a National Pollution Discharge Elimination System permit discharge program and has an emergency response management plan. GLWA voluntarily developed and received approval in 2016 for a source water protection program (SWIPP) for the Detroit River intakes. The programs include 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 source water protection area, management approaches for protection, contingency plans, siting of new sources and public participation and education. If you would like to know more information about the Source Water Assessment or SWIPP, contact your water department (313) 386-9000.

## What Is In The 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 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.

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 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 be 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 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

## Health Information

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).

## 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 Lincoln Park 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>.

**About The Following Table...** The following table provides detailed water quality analyses for the year 2016. Included in the analyses is contaminant testing on water from the Southwest and Springwell Treatment Plants, which supplies water to The City of Lincoln Park. Included are the results of the testing along with the allowable levels and any violations. Sources of contaminants in drinking water are also listed.

## Key to the Detected Contaminants Table

<b>Symbol</b>	<b>Abbreviation</b>	<b>Definition/Explanation</b>
>	Greater than	
°C	Celsius	A scale of temperature in which water freezes at 0° and boils at 100° under standard conditions.
<b>AL</b>	Action Level	The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements which a water system must follow.
<b>HAA5</b>	Haloacetic Acids	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	The average of analytical results for samples at a particular monitoring location during the previous four quarters.
<b>MCL</b>	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.
<b>MCLG</b>	Maximum Contaminant Level Goal	The level of contaminant in drinking water below which there is no known or expected risk to health.
<b>MRDL</b>	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.
<b>MRDLG</b>	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.
<b>n/a</b>	not applicable	
<b>ND</b>	Not Detected	
<b>NTU</b>	Nephelometric Turbidity Units	Measures the cloudiness of water.
<b>pCi/L</b>	Picocuries Per Liter	A measure of radioactivity
<b>ppb</b>	Parts Per Billion (one in one billion)	The ppb is equivalent to micrograms per liter. A microgram = 1/1000 milligram.
<b>ppm</b>	Parts Per Million (one in one million)	The ppm is equivalent to milligrams per liter. A milligram = 1/1000 gram.
<b>RAA</b>	Running Annual Average	The average of analytical results for all samples during the previous four quarters.
<b>TT</b>	Treatment Technique	A required process intended to reduce the level of a contaminant in drinking water.
<b>TTHM</b>	Total Trihalomethanes	Total Trihalomethanes is the sum of chloroform, bromodichloromethane, dibromochloromethane and bromoform. Compliance is based on the total.
<b>µmhos</b>	Micromhos	Measure of electrical conductance of water

### U.S. EPA Unregulated Contaminant Monitoring Rule 3 (UCMR3) Monitoring Results

Unregulated Contaminant	MCLG	MCL	Highest Level Detected	Source of Contamination
Chromium (Hexavalent)	N/A	N/A	0.20 ppb	Naturally-occurring element; used in making steel and other alloys; chromium-6 is used for chrome plating, dyes and pigments, leather tanning, and wood preservation
Chromium, Total	N/A	N/A	0.24 ppb	Naturally-occurring element; used in making steel and other alloys
Molybdenum	N/A	N/A	0.66 ppb	Naturally-occurring element found in ores and present in plants, animals and bacteria; commonly used form molybdenum trioxide used as a chemical reagent
Strontium	N/A	N/A	117 ppb	Naturally-occurring element; historically, commercial use of strontium has been in the faceplate glass of cathode-ray tube televisions to block x-ray emissions
Vanadium	N/A	N/A	0.87 ppb	Naturally-occurring elemental metal; used as vanadium pentoxide which is a chemical intermediate and a catalyst

Collection and sampling result information in this table was provided by the Great Lakes Water Authority (GLWA) and the Michigan Department of Environmental Quality (DEQ)

***Unregulated contaminants are those for which U.S. EPA has not established drinking water standards. Monitoring helps U.S. EPA to determine where these contaminants occur and whether it needs to regulate those contaminants.***

**Southwest Water Treatment Plant  
2016 Regulated Detected Contaminants Tables**

Inorganic Chemicals – Monitoring at the Plant Finished Water Tap								
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
Fluoride	5-10-16	ppm	4	4	0.55	n/a	no	Erosion of natural deposits; Water additive, which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate	5-10-16	ppm	10	10	0.53	n/a	no	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.

Disinfection By-Products – Monitoring in Distribution System, Stage 2 Disinfection By-Products								
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)	2016	ppb	n/a	80	45.75	9.9-61	no	By-product of drinking water chlorination
Haloacetic Acids (HAA5)	2016	ppb	n/a	60	10.45	2.4-16	no	By-product of drinking water disinfection

Disinfectant Residuals – Monitoring in Distribution System by Treatment Plant								
Regulated Contaminant	Test Date	Unit	Health Goal MRDLG	Allowed Level MRDL	Highest RAA	Quarterly Range of Detection	Violation yes/no	Major Sources in Drinking Water
Total Chlorine Residual	Jan-Dec 2016	ppm	4	4	0.65	0.53-0.76	no	Water additive used to control microbes

2016 Turbidity – Monitored every 4 hours at Plant Finished Water			
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
0.29 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.			

January – March 2016 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	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.

2014 Lead and Copper Monitoring at Customers' Tap								
Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Action Level AL	90 <sup>th</sup> Percentile Value*	Number of Samples over AL	Violation yes/no	Major Sources in Drinking Water
Lead	2014	ppb	0	15	0.6	0	no	Corrosion of household plumbing system; Erosion of natural deposits.
Copper	2014	ppm	1.3	1.3	0.0658	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.

**Southwest Water Treatment Plant  
2016 Regulated Detected Contaminants Tables**

Regulated Contaminant	Treatment Technique	Typical Source of Contaminant
<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

Radionuclides 2014							
Regulated contaminant	Test date	Unit	Health Goal MCLG	Allowed Level	Level detected	Violation Yes/no	Major Sources in Drinking water
<b>Combined Radium 226 and 228</b>	5-13-14	pCi/L	0	<b>5</b>	0.65 + or - 0.54	no	Erosion of natural deposits

Contaminant	MCLG	MCL	Level Detected	Source of Contamination
<b>Sodium (ppm)</b>	n/a	n/a	5.41	Erosion of natural deposits

The Great Lakes Water Authority monitored for Cryptosporidium in our source water (Detroit River) from our Southwest Water Treatment Plant during 2016. Cryptosporidium was detected twice in our source water samples. A follow-up water sample was collected from the treated water and Cryptosporidium was not found to be present. Cryptosporidium is a microbial pathogen found in surface water throughout the U.S. Although filtration removes Cryptosporidium, the most commonly-used filtration methods cannot guarantee 100 percent removal. Our monitoring indicates the presence of these organisms in our source water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of Cryptosporidium may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immunocompromised people, infants and small children, and the elderly are at greater risk of developing life-threatening illness. We encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water.

## Springwells Water Treatment Plant 2016 Regulated Detected Contaminants Tables

The Great Lakes Water Authority monitored for Cryptosporidium in our source water (Detroit River) from our Southwest Water Treatment Plant during 2016. Cryptosporidium was detected twice in our source water samples. A follow-up water sample was collected from the treated water and Cryptosporidium was not found to be present. Cryptosporidium is a microbial pathogen found in surface water throughout the U.S. Although filtration removes Cryptosporidium, the most commonly-used filtration methods cannot guarantee 100 percent removal. Our monitoring indicates the presence of these organisms in our source water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of Cryptosporidium may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immunocompromised people, infants and small children, and the elderly are at greater risk of developing life-threatening illness. We encourage immunocompromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water.

### Inorganic Chemicals – Monitoring at the Plant Finished Water Tap

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
Fluoride	5-10-16	ppm	4	4	0.50	n/a	no	Erosion of natural deposits; Water additive, which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate	5-10-16	ppm	10	10	0.34	n/a	no	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.

### Disinfection By-Products – Monitoring in Distribution System, Stage 2 Disinfection By-Products

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)	2016	ppb	n/a	80	45.75	9.9-61	No	By-product of drinking water chlorination
Haloacetic Acids (HAA5)	2016	ppb	n/a	60	10.45	2.4-16	No	By-product of drinking water disinfection

### Disinfectant Residuals – Monitoring in Distribution System by Treatment Plant

Regulated Contaminant	Test Date	Unit	Health Goal MRDLG	Allowed Level MRDL	Highest RAA	Quarterly Range of Detection	Violation yes/no	Major Sources in Drinking Water
Total Chlorine Residual	Jan-Dec 2016	ppm	4	4	0.74	0.67-0.81	no	Water additive used to control microbes

### 2016 Turbidity – Monitored every 4 hours at Plant Finished Water

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
0.33 NTU	99.7 %	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.

### January – March 2016 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	0	no	Naturally present in the environment
<i>E. coli</i> Bacteria	0	A routine sample and a repeat sample are total coliform positive, and one is also fecal or <i>E.coli</i> positive.	0	no	Human waste and animal fecal waste.

## Springwells Water Treatment Plant 2016 Regulated Detected Contaminants Tables

2014 Lead and Copper Monitoring at Customers' Tap								
Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Action Level AL	90 <sup>th</sup> Percentile Value*	Number of Samples over AL	Violation yes/no	Major Sources in Drinking Water
Lead	2014	ppb	0	15	0.6	0	no	Corrosion of household plumbing system; Erosion of natural deposits.
Copper	2014	ppm	1.3	1.3	0.0658	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.

Regulated Contaminant	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 TOC removal requirement	Erosion of natural deposits

Contaminant	MCLG	MCL	Level Detected	Source of Contamination
Sodium (ppm)	n/a	n/a	4.66	Erosion of natural deposits