

Annual Drinking Water Quality Report For 2016

**City of Lockport Department of Public Utilities
Division of Water
One Locks Plaza
Lockport, NY 14094
Public Water Supply ID# NY3100564**

INTRODUCTION

To comply with State and Federal regulations, the City of Lockport Water Department will be annually issuing a report describing the quality of your drinking water. The purpose of this report is to raise your understanding of drinking water and awareness of the need to protect our drinking water sources. Last year, your tap water met all New York State drinking water health standards. We are proud to report that our system did not violate a maximum contaminant level or any other water standard. This report provides an overview of last year's water quality. Included are details about where your water comes from, what it contains, and how it compares to State standards.

If you have any questions concerning this report or your water utility, please contact Dennis McNamara, Chief Water Treatment Plant Operator, 433-1645 ext 303. Attending the City Common Council Meetings scheduled for the first and third Wednesday of each month afford opportunities for public participation in decisions that may affect the quality of your water.

WHERE DOES OUR WATER COME FROM?

In general, 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 activities. Contaminants that may be present in source water include: microbial contaminants; inorganic contaminants; pesticides and herbicides; organic chemical contaminants; and radioactive contaminants. In order to ensure that tap water is safe to drink, the State and the EPA prescribe regulations which limit the amount of certain contaminants in water provided by public water systems. The State Health Department's and the FDA's regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

The primary source of water for the City of Lockport is the East Branch of the Niagara River. The quantity and quality of your source of raw water is considered excellent by Niagara County Health Department standards. During 2016, our system did not experience any restriction of our water source. At the Raw Water Pumping Station (1968), chlorination is utilized for disinfection and zebra mussel control. The raw water is then pumped 13 miles through a 30-inch forced main to the Lockport Water Treatment Plant (1930) located at 220 Summit St.

The water treatment plant employs conventional treatment processes of coagulation, sedimentation, filtration, chlorination and fluoridation. Coagulation and sedimentation are used to settle out particles (dirt) before filtration. Filtration removes or filters out fine organic and inorganic particles that did not settle out of the water during the sedimentation process. Chlorine is used to disinfect the water and provide a residual disinfectant that ensures the sanitary quality of the water as it is pumped from the water treatment plant to your home. Fluoride is added to the water to help prevent dental cavities.

CITY OF LOCKPORT SWAP SUMMARY

The New York State Department of Health completed a Source Water Assessment of the supply's raw water source under the States Source Water Assessment Program (SWAP). The purpose of this program is to compile, organize, and evaluate information regarding possible and actual threats to the quality of public water supply (PWS) sources. It is important to note that source water assessment reports estimate the potential for untreated drinking water sources to be impacted by contamination. These reports do not address the safety or quality of treated finished potable tap water. The Great Lakes' watershed is exceptionally large and too big for a detailed evaluation in the SWAP. General drinking water concerns for public water supplies which use these sources include: storm generated turbidity, wastewater, toxic sediments, shipping related spills, and problems associated with exotic species (e.g. zebra mussels - intake clogging and taste and odor problems). The SWAP is based on the analysis of the contaminant inventory compiled for the drainage area deemed most likely to impact drinking water quality at this public water supply raw water intake. This assessment found an elevated susceptibility to contamination for this source of drinking water. The amount of residential land in the assessment area results in elevated potential for microbials, disinfection byproduct precursors, turbidity and pesticides contamination. There is also a high density of sanitary wastewater discharges, which results in elevated susceptibility for numerous contaminant categories. Non-sanitary wastewater could also impact source water quality.

There is also noteworthy contamination susceptibility associated with other discrete contaminant sources, and these facility types include: Chemical Bulk Storage facilities, Inactive Hazardous Waste Sites, Landfills, Toxic Release Inventory data, Municipally Operated Sewage Facilities and Resources Conservation and Recovery Act (RCRA) facilities. Limited copies of the SWAP report may be obtained at the Water Office in City Hall.

FACTS AND FIGURES

The City of Lockport Water Treatment Plant is a 12 million gallon a day plant (designed capacity of 16 million gallons) owned by and servicing the City of Lockport. Our water system serves a population of 21,165 residents through 7900 service connections. The total water produced in 2016 was 1.77 billion gallons of water. The average daily water treated and pumped into the distribution system was 4,840,711 gallons per day. Our highest single day was 10,840,000 gallons. The amount of water delivered to customers was 0.598 billion gallons. This leaves unaccounted for a total of 1.17 billion gallons (66% of the total amount produced). This water was used to flush mains, fight fires but the majority was lost through leakage within the City’s aging water mains. The average family of four used 75,000 gallons a year (10,027 cubic feet) at a cost of \$520 (less than 1¢ per gallon). The rate was increased in 2014 for the first time since 2008.

The City of Lockport and the Niagara County Water District are interconnected via a 20-inch water main. Both water systems benefit from the ability to deliver water to one another if the need arises.

ARE THERE CONTAMINANTS IN OUR DRINKING WATER?

The City of Lockport Water Department routinely monitors for contaminants in your drinking water according to Federal and State laws. These contaminants include: total coliform, turbidity, inorganic compounds, nitrate, lead and copper, volatile organic compounds, total trihalomethanes, haloacetic acids, radiological and synthetic organic compounds. The contaminants detected in your drinking water are included in the following table. It is important to remember that the presence of these contaminants does not necessarily pose a health risk. Your drinking water meets or exceeds all Federal and State requirements. More information about contaminants and potential health effects can be obtained by calling the EPA’s Safe Drinking Water Hotline (800-426-4791) or the Niagara County Department of Health at (716) 439-7444.

All drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some contaminants. As water travels over the surface of the land or through the ground, it dissolves many substances. Some occur naturally and some result from the presence of animals and humans. Contaminants that may be present in our source water include: microbes (ex. bacteria, viruses), inorganic compounds (ex. lead, copper), organic compounds (ex. pesticides, herbicides) and radioactive compounds (ex. alpha radiation). In order to ensure our drinking water is safe, the State and Federal Governments have prescribe regulations that limit the amount of certain contaminants in our tap water.

The table presented below lists compounds that were detected in your drinking water. The State allows us to test for some contaminants less than once a year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, are more than one year old. Unless otherwise noted test results were from the period of January 1st to December 31st, 2016. Limited copies of this report may be obtained at the Water Office in City Hall or viewed on the Internet site goo.gl/XSAMft.

Table of Detected Contaminants

Contaminate	Violation Y/N	Date of Sample	Unit Measurement	Level Detected (Avg/Max) (Range)	MCLG	Regulatory Limit (MCL, TT, AL)	Likely Source Of Contamination
Microbiological Contaminants							
Turbidity ¹ - Entry Point	N	2/16/16	NTU	0.14 (0.02 - 0.14)	N/A	TT= \leq 1 NTU	Soil Runoff
Turbidity ¹ - Entry Point	N	1-12/16	NTU	100% \leq 0.3	N/A	TT= 95% samples \leq 0.3 NTU	Soil Runoff

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Contaminant	Violation Y/N	Date of Sample	Unit Measurement	Level Detected (Avg/Max) (Range)	MCLG	Regulatory Limit (MCL, TT, AL)	Likely Source Of Contamination
Turbidity ²⁻ Distribution	N	1-12/16	NTU	0.46 (0.11 - 0.46)	N/A	5.00 Monthly Avg.	Iron build up in water mains in distribution system
Radioactive Contaminants							
Gross Alpha	N	2/6/08	pCi/l	1.23 ± 0.58	0	15	Erosion of natural deposits
Radium 226	N	2/6/08	pCi/l	0.12 ± 0.06	0	5	Erosion of natural deposits
Radium 228	N	4/10/08	pCi/l	0.97 (0.40 – 2.28)	0	5	Erosion of natural deposits
Inorganics							
Barium	N	3/2/16	µg/l	19.0	2000	2000	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Copper	N	6-8/2014	µg/l	59.0 ³⁻ (7.8-130)	1300	AL = 1300	Corrosion of household plumbing systems, erosion of natural deposits
Fluoride	N	10/4/16	mg/l	0.87 (0.58-0.87)	N/A	MCL=2.2	Erosion of natural deposits; discharge from fertilizer and aluminum factories water additive which promotes strong teeth
Lead	N	6-8/2014	µg/l	8.1 ⁴⁻ (ND-25.8)	0	AL = 15	Corrosion of household plumbing systems, erosion of natural deposits
Nitrate as Nitrogen	N	4/28/16	mg/l	0.36	10	MCL=10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Sodium	N	3/3/16	mg/l	10.5	N/A	AL=20.0	Naturally occurring; road salt; water softeners; animal waste
UCMR-3 Unregulated Substances							
Vanadium Entry/Distribution	N	01&04 2014	µg/l	(0.14-0.16)	N/A	NA	Erosion of natural deposits
				(0.10-0.11)			
Molybdenum Entry/Distribution	N	01&04 2014	µg/l	(1.1-1.3)	N/A	NA	Erosion of natural deposits
				(1.1-1.2)			
Strontium Entry/Distribution	N	01&04 2014	µg/l	(146-165)	N/A	NA	Erosion of natural deposits
				(147-169)			
Chromium-5 Entry/Distribution	N	02&04 2014	µg/l	(0.089-0.15)	N/A	MCL=100	Discharge from steel and pulp mills; erosion of natural deposits
				(0.27-0.16)			
Chromium-6 Entry/Distribution	N	01&04 2014	µg/l	(0.051-0.053)	N/A	MCL=100	Discharge from steel and pulp mills; erosion of natural deposits
				(0.057-0.065)			
Disinfection Byproducts							
Total Trihalomethanes	N	2016	µg/l	42 ⁵⁻ (22-53)	N/A	MCL=80	Byproduct of drinking water chlorination

Table of Detected Contaminants

Contaminant	Violation Y/N	Date of Sample	Unit Measurement	Level Detected (Avg/Max) (Range)	MCLG	Regulatory Limit (MCL, TT, AL)	Likely Source Of Contamination
Haloacetic Acids	N	2016	µg/l	31 ⁵⁻ (17-39)	N/A	MCL=60	Byproduct of drinking water chlorination
Disinfectants							
Chlorine Residual Entry Point	N	1-12/16	mg/l	0.82 (0.69-0.92)	N/A	MRDL= 4 ⁶⁻	Byproduct of drinking water chlorination
Chlorine Residual (Distribution)	N	1-12/16	mg/l	0.9 (ND-0.9)	N/A	MRDL= 4 ⁶⁻	Byproduct of drinking water chlorination
Unregulated Substances							
Alkalinity Source	N	1-12/16	mg/l	92 (90-98)	N/A	Not Reg.	Erosion of natural organic deposits
Total Organic Carbon Source	N	1-12/16	mg/l	2.47 (1.9-3.26)	N/A	Not Reg.	Erosion of natural organic deposits
Total Organic Carbon Finished	N	1-12/16	mg/l	1.79 (1.50-2.03)	N/A	Not Reg.	Erosion of natural organic deposits

- 1- Turbidity is a measure of the cloudiness of the water. We monitor turbidity because it is a good indicator of the effectiveness of our filtration system. Our highest single turbidity measurement (0.14 NTU) for the year occurred on 2/16/2016. State regulations require that turbidity must always be below 1 NTU. The regulations require that 95% of the filtered water turbidity samples have measurements below 0.3 NTU. The turbidity values of all samples collected were below 0.3 NTU 100 % of the time.
- 2- Turbidity in the distribution system is a snap shot picture of the clarity of water at predetermined locations collected during the year. There are 52 locations throughout the city used with a total of 490 samples collected in 2016. A violation occurs when the monthly average of the results of all distribution samples collected in any calendar month exceeds the MCL of 5 NTU. Sporadic high results can occur when there is a disruption in the flow due to a water main break, fire department usage or even street sweepers filling from a hydrant.
- 3- The level presented represents the 90th percentile of the 30 sites tested. A percentile is a value on a scale of 100 that indicates the percent of a distribution that is equal to or below it. The 90th percentile is equal to or greater than 90% of the copper values detected in the distribution system. In this case, 30 samples were collected from the distribution system and the 90th percentile value was the third highest value. The action level (AL) for copper was not exceeded at any of the sites tested.
- 4- The level presented represents the 90th percentile of the 30 samples collected. The action level for lead was not exceeded at any of the 30 sites tested.
- 5- This level represents the highest locational running annual average calculated from data collected.
- 6- The value represents the Maximum Residual Disinfection Level (MRDL), which is a level of disinfectant added for water treatment that may not be exceeded at the consumer's tap without an unacceptable possibility of adverse health effects.

In the above table you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we have provided the following definitions:

Action Level – (AL) the concentration of a contaminant that, if exceeded, triggers treatment or other requirements, which a water system must follow.

Distribution- sampling point representative of drinking water within the distribution system.

Entry Point- a representative sampling location after the last point of treatment but before the first consumer connection.

Maximum Contaminant Level (MCL) - The “Maximum Allowed” is 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.

Maximum Contaminant Level Goal (MCLG) - The “Goal” is 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.

Maximum Residual Disinfectant Level (MRDL) – The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Million Fibers per Liter (MFL) - million fibers per liter is a measure of the presence of asbestos fibers that are longer than 10 micrometers.

Non-Detects (ND) - laboratory analysis indicates that the constituent is not present.

N/A – Not applicable

Nephelometric Turbidity Unit (NTU) - nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

Parts per million (ppm) or Milligrams per liter (mg/l) - one part per million corresponds to one minute in two years or a single penny in \$10,000.

Parts per billion (ppb) or Micrograms per liter (µg/l) - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

Parts per trillion (ppt) or Nanograms per liter (ng/l) - one part per trillion corresponds to one minute in 2,000,000 years, or a single penny in \$10,000,000,000.

Parts per quadrillion (ppq) or Picograms per liter (pg/l) - one part per quadrillion corresponds to one minute in 2,000,000,000 years or one penny in \$10,000,000,000,000.

Treatment Technique (TT) - A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

WHAT DOES THIS INFORMATION MEAN?

As you can see by the table, our system had no violations. We have learned through our testing that some contaminants have been detected; however, these contaminants were detected below the level allowed by the State.

DO I NEED TO TAKE SPECIAL PRECAUTIONS?

Although our drinking water met or exceeded State and Federal regulations, some people may be more vulnerable to disease causing microorganisms or pathogens 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 from their health care providers about drinking water. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium, Giardia and other microbial pathogens are available from the Safe Drinking Water Hotline (800-426-4791). Information on Cryptosporidiosis and Giardiasis is also available by contacting the NCDOH, 5467 Upper Mountain Rd, Lockport, NY. 14094 or phone (716) 439-7444.

Information on Fluoride Addition

Our system is one of the many drinking water systems in New York State that provides drinking water with a controlled, low level of fluoride for consumer dental health protection. According to the United States Centers for Disease Control, fluoride is very effective in preventing cavities when present in drinking water at a properly controlled level. To ensure that the fluoride supplement in your water provides optimal dental protection, we monitor fluoride levels on a daily basis to make sure fluoride is maintained at a target level of 0.7 mg/l. During 2016 monitoring showed that fluoride levels in your water were within 0.2 mg/l of the target level for 100% of the time. None of the monitoring results showed fluoride at levels that approach the 2.2 mg/l MCL for fluoride.

Water Conservation

Unlike many areas of the country, the City of Lockport has access to more than enough water to meet its current and future needs. In many areas of the country, local or regional water shortages exist, at least for parts of the year. Although our water supply source is adequate, we need to use it wisely. In an effort to promote the wise use of water, to avoid waste and reduce our energy demands, we offer the following conservation tips:

1. Fix leaking faucets. A drop a minute can amount to 2,400 gallons over the course of a year.
2. Check your toilet(s) for leaks. Leaking toilets not only waste water but also are the leading cause of high water bills. Leaking toilets can waste up to 500 gallons of water per day. To check your toilet for leaks, place a few drops of food coloring in the back of your toilet. Let it sit for approximately an hour or so without using the toilet. If the food coloring is present in the bowl, the toilet is leaking.
3. Use water saving devices such as flow restricting showerheads, low flow faucets (aerators) and low flow flush toilets.
4. Do full loads when washing clothes and dishes. Use a garbage disposal sparingly. They waste water.
5. Water your lawn only when necessary. The most effective time to water is before 10:00 am. After that time you will lose water through evaporation.
6. If you have a swimming pool, fill it during the night when demands on power and production systems are less.
7. When washing your car, use a bucket for washing and turn on the hose only for rinsing.

Revenues and Expenditures

During 2016, the City of Lockport Water Department spent \$4,011,713.09 and received revenues of \$4,549,956.11.

System Improvements

In 2016 we installed 50 feet of new water pipe improving the flow and water quality to the system. We repaired thirty main breaks and replaced twenty five service taps. We also are continuing an aggressive leak detection program. We are continuing to replace meters with remote read meter heads. These meter heads allow us to read meters simply by driving by the residence. We replaced 200 feet of feed line, 3 valves and 2 dose pumps for the coagulant system at the water treatment plant. In our continuing efforts to maintain a safe and dependable water supply it may be necessary to make improvements in your water system. The City's water system consists of approximately 100 miles of pipe, ranging in size from 4 to 30 inches in diameter. The majority of this pipe (60%) is 6-inch cast iron, installed in the late 19th century and early 20th century. These same pipes that deliver drinking water to your home are at or very near their life expectancy and will need to be replaced within the next 30 years. The cost of replacement will be reflected in the water rate structure. The City of Lockport Water Department faces the difficult challenge of replacing its aging infrastructure and at the same time keeping water affordable for all its residents.

Closing

Thank you for allowing us to continue to provide your family with quality drinking water. We at the City of Lockport Water Department work around the clock to provide top quality water to every tap. Your Water Department is staffed by a competent group of professional people dedicated to this task. We ask that all our customers help us protect our water sources, which are the heart of our community and our way of life. Please call our office if you have questions.