



Niagara Falls Water Board
Annual Drinking Water Quality Report for 2011
5815 Buffalo Avenue, Niagara Falls, NY 14304
(Public Water Supply #NY3100568)

INTRODUCTION

To comply with State and Federal regulations, the Niagara Falls Water Board issues an annual report describing the quality of your drinking water. The purpose of this report is to increase your understanding of drinking water and awareness of the need to protect our drinking water sources. Last year, your tap water met all State drinking water health standards. We are pleased to report that our system has never violated a state established maximum contaminant level. 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 New York State standards.

If you have any questions about this report or concerning your drinking water, please contact our Chief Operator, Julie Hoy at (716) 283-9770 ext. 203, or our Microbiologist, Larry Sklarski at ext. 205. We want you to be informed about your drinking water. If you want more information, please contact the Executive Director, Paul Drof at (716) 283-9770 or attend any of our regularly scheduled Niagara Falls Water Board meetings. The meetings are held every fourth Thursday of the month at 5:00pm at the Michael C. O'Laughlin Water Plant at 5815 Buffalo Ave., Niagara Falls, NY.

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 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 EPA's regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Our water source is the upper Niagara River. During 2011, our system did not experience any restriction on our water source. The placement of the intake allows water to be drawn that is least affected by runoff. At the Low Lift pump station, water passes through screens to remove excess debris. It is then pumped to the pre-treatment tanks where chlorine is added as a disinfectant. Powdered activated carbon may also be added during the summer months to aid in taste and odor abatement. In the rapid mix chamber, poly-aluminum chloride (PACl) is then added to enhance particulate removal. The water then travels to the flocculation basins. These basins gently mix the PACl and any particles, allowing them to form a floc. The water then travels to sedimentation basins and the floc settles to the bottom of the basins. The water then flows into rapid sand filters. The filters remove any particles that remain. After filtration, the treated water is chlorinated again and stored in reservoirs before being pumped into the distribution system. The Niagara Falls water system is one of the many systems in New York State that adds a low level of fluoride to drinking water in order to provide consumers 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 levels that range from 0.8 to 1.2 mg/L (parts per million). Our fluoride addition facility is designed and operated to meet this optimal range. As a service to the community, a Poly-Orthophosphate blend is also added to prevent household lead and copper contamination.

SOURCE WATER ASSESSMENT PROGRAM (SWAP) SUMMARY

The New York State Department of Health completed a Source Water Assessment of the supplies 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 agricultural and residential lands in the assessment area results in elevated potential for microbial, disinfection byproduct precursors 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, and Resources Conservation and Recovery Act (RCRA) facilities. Anyone interested in obtaining a copy of our SWAP can do so by submitting a written request to the Niagara Falls Water Board or by visiting our web site at www.nfwb.org.

FACTS AND FIGURES

Our water system serves about 55,000 people through 19,500 service connections. The total water produced in 2011 was over 6.7 billion gallons. The daily average of water treated and pumped into the distribution system was 18.4 million gallons per day. Our highest single day was about 24.3 million gallons. The annual amount of water delivered to customers was about 2.2 billion gallons. This leaves about 4.5 billion gallons unaccounted for. Unaccounted for water includes such conditions as flushing of water mains, meter inaccuracies, illegal consumption, fire hydrant usage, authorized unmetered usage (street cleaning, etc.) and underground pipe leakage. In 2011, water customers were charged \$4.06 per 1000 gallons.

ARE THERE CONTAMINANTS IN OUR DRINKING WATER?

As the State regulations require, we routinely test your drinking water for numerous contaminants. These contaminants include: total Coliform, turbidity, inorganic compounds, nitrate, lead and copper, volatile organic compounds, total trihalomethanes, haloacetic acids, radiological and synthetic organic compounds. During 2011, Water Department staff performed almost 11,146 individual water quality tests. The table presented below depicts which compounds were detected in your drinking water. A more detailed supplemental list of all monitored constituents is available by calling (716) 283-9770 and requesting a copy. It should be noted that all drinking water, including bottled drinking water, may be reasonably 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 EPA's Safe Drinking Water Hotline (800-426-4791) or the Niagara County Health Department at (716) 439-7444.

REGULATED DETECTED CONTAMINANTS							
Metals, Inorganics Physical Tests	Violation Yes/No	Date of Sample (mo./year)	Level Detected (Avg/Max) (Range)	Unit Measurement	MCLG	MCL	Source in Drinking Water
Arsenic	No	6/2011	0.6	ug/L	0	10.0	Erosion of natural deposits; runoff from orchards; runoff from glass & electronics production wastes
Barium	No	6/2011	0.02	mg/L	NE	2	Erosion of natural deposits
Chloride	No	2011	23.7 21.7 - 27.4	mg/L	250	NE	Naturally occurring or indicative of road salt contamination
Chlorine Entry Point, Total	No	2011	1.22 1.04 - 1.37	mg/L	MRDLG = 4.0	MRDL = 4.0	By-product of drinking water chlorination
Copper Entry Point	No	6/2011	0.0008	mg/L	1.3	AL = 1.3	Erosion of natural deposits
Copper ¹ Distribution	No	6/2011-9/2011	0.1050 ² 0.002 - 0.164	mg/L	1.3	AL = 1.3	Corrosion of household plumbing systems, erosion of natural deposits
Fluoride, Entry Point	No	2011	0.88 0.69 - 1.19	mg/L	2.2	2.2	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories

Lead ¹ Distribution	No	6/2011- 9/2011	12.5 ² <0.5 – 25.6	µg/L	0	AL = 15	Corrosion of household plumbing systems, erosion of natural deposits
Nickel, Total	No	6/2011	0.0016	mg/L	0.1	0.1	Naturally occurring or industrial discharges
Nitrate	No	1/2011	0.27	mg/L	10	MCL = 10	Runoff from fertilizer use; leaching from septic tanks, sewage: erosion of natural deposits
pH	No	2011	7.60 7.39 – 7.98	SU	NR	NE	Naturally occurring
Sodium ⁵	No	6/2011	9.89	mg/L	(see Health Effects)	NE	Naturally occurring; Road salt; Water softeners; Animal waste
Phosphates	No	2011	0.10 0.05 - 0.13	mg/L	NR	NE	Corrosion inhibitor added to prevent lead & copper leaching in houses
Turbidity ³ Entry Point	No	2011	0.06 0.05 - 0.08	NTU	NE	TT = 95% of samples <0.3 NTU	Soil Runoff
Turbidity ⁴ Distribution	No	2011	0.13 0.05 – 11.8	NTU	NE	5.00 NTU monthly average	Iron build up in water mains in distribution system
Chlorine, Free Distribution	No	2011	0.71 <0.2 – 1.26	mg/l	NE	MRDL = 4.0	Result of drinking water chlorination

1 – Lead or Copper is not present in the drinking water that is treated and delivered to your home. Lead or Copper in drinking water is primarily from materials and components associated with service lines and home plumbing. If present, elevated levels lead or copper can cause serious health problems, especially for pregnant women and young children. The NFWB 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 and copper exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead or copper 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>.

2 – The level presented represents the 90th percentile of the thirty samples collected. The action level for lead was exceeded at only three of the sites tested and not exceeded for copper.

3– Turbidity is a measure of the composite effluent clarity of the water; the lower the turbidity, the clearer the water. Turbidity testing is a good indicator of the effectiveness of our filtration system. State regulations require that turbidity must always be below 1 NTU. Our highest single turbidity measurement for the year occurred on 05/16/11 (0.08 NTU). The regulations require that 95% of the turbidity samples collected have measurements below 0.3 NTU.

4– Turbidity in the distribution system is a snap shot picture of the clarity of water at predetermined locations collected during the year. There are 14 locations throughout the city used with a total of 881 samples collected in 2011. 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.

5-Health Effects for Sodium; Water containing more than 20 mg/l of sodium should not be used for drinking by people on severely restricted sodium diets. Water containing more than 270 mg/l of sodium should not be used for drinking by people on moderately restricted sodium diets.

Organic Compounds	Violation Yes/No	Date of Sample (mo./year)	Level Detected (Avg/Max) (Range)	Unit Measurement	MCLG	MCL	Source in Drinking Water
Total Trihalomethanes	No	2011	40.7 ¹ 23.3 – 57.0	µg/L	NE	MCL = 80	Byproduct of drinking water Chlorination
Total Haloacetic Acids	No	2011	14.8 ¹ 9.6 – 21.5	µg/L	NE	MCL = 60	Byproduct of drinking water Chlorination

1 -This level represents the average calculated from data collected from four quarterly samples collected in the 2011 calendar year..

Radioactive Compounds	Violation Yes/No	Date of Sample (mo./year)	Level Detected (Avg/Max) (Range)	Unit Measurement	MCLG	MCL	Source in Drinking Water
Radium 226	No	5/2008	0.11 0.54	pCi/L ¹	NE	5	Erosion of natural deposits
Radium 228		3-5/2008	0.13 – 0.85			5	
Uranium		5/2008	ND			20	
Total Alpha		5/2008	0.74			15	

1 – Picocuries per liter is a measure of the radioactivity in water.

Microbiological Parameters	Violation Yes/No	Date of Sample (mo./year)	Level Detected (Avg/Max) (Range)	Unit Measurement	MCLG	MCL	Source in Drinking Water
Heterotrophic Plate Count	No	2011	5 0 - 215	cfu/1.0ml	NE	500	HPC measures a range of bacteria that are naturally present

UNREGULATED SUBSTANCES				
Metals, Inorganics Physical Tests	Date of Sample (mo./year)	Level Detected (Avg/Max) (Range) mg/L	MCLG	MCL
Alkalinity	2011	85.9 77.2 – 92.0	NE	NR
Aluminum	6/2011	0.13	NE	0.05 -0.20
Calcium	2011	37.0 34.6 – 43.0	NE	NR
Color	2009	5 Pt Co	<15	NR
Conductivity	2011	302.7µS/cm 284.0 – 332.0	NE	NR
Corrosivity	6/2011	-0.62		
Hardness	2010	119.4 116.5 – 122.0	NE	NR
Magnesium Sulfate	6/2011 2010	7.84 28.4 28.0 – 29.0	NE NE	NR 250
Total Dissolved Solids	6/2011	119	NE	NR
Total Organic Carbon	2011	1.80 1.20 – 2.40	NE	NR

Abbreviations And Terms:

AL = Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

cfu/1.0ml = Colony forming units per 1.0 milliliters.

LSI – Langelier Saturation Index: Provides an indicator of the degree of saturation of water with respect to calcium carbonate. A negative LSI has no scale potential where as with a positive LSI scale can form.

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.

MCLG = Maximum Contaminant Level Goal: 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.

mg/L = Milligrams per liter: One part per million.

µg/L = Micrograms per liter: One part per billion.

µS/cm = Micro Siemens per centimeter

MRDL = Maximum Residual Disinfectant Level: 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.

MRDLG = Maximum Residual Disinfectant Level Goal: The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contamination

NE = Not Established.

NR = Not Regulated.

NTU = Nephelometric Turbidity Unit: A measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

PtCo = Platinum Cobalt Color Units

SU = Standard Units: Used for the measurement of pH.

TT = Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.

IS OUR WATER SYSTEM MEETING OTHER RULES THAT GOVERN OPERATIONS?

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. During 2011, our system was in compliance with all applicable State & Federal drinking water requirements.

WHAT ABOUT SECURITY?

Since the events of September 11, we have all become more aware of security issues in our daily lives. The staff of the Michael C. O’Laughlin Water Plant is certainly no exception. The water department has undertaken several security

improvements to safeguard your water supply, both at the plant and out in the distribution system. We encourage the community to call our facility at (716) 283-9770 or the police (911) if you happen to observe any unusual or suspicious activity around the water plant or at one of our storage tanks.

WHY SAVE WATER AND HOW TO AVOID WASTING IT?

Although our system has an adequate amount of water to meet present and future demands, there are a number of reasons why it is important to conserve water:

- ◆ Saving water saves energy and some of the costs associated with both of these necessities of life;
- ◆ Saving water reduces the cost of energy required to pump water, pumping systems and water towers;
- ◆ Saving water lessens the strain on the water system during a dry spell or drought, helping to avoid severe water use restrictions so that essential fire fighting needs are met.

You can play a role in conserving water by becoming conscious of the amount of water your household is using, and by looking for ways to use less whenever you can. It is not hard to conserve water. Conservation tips include:

- ◆ Automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded. So get a run for your money and load it to capacity.
- ◆ Turn off the tap when brushing your teeth.
- ◆ Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it up and you can save almost 6,000 gallons per year.
- ◆ Check your toilets for leaks by putting a few drops of food coloring in the tank, watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from one of these otherwise invisible toilet leaks. Fix it and you save more than 30,000 gallons a year.
- ◆ Use your water meter to detect hidden leaks. Simply turn off all taps and water using appliances, then check the small diamond on the meter, if it moves, you have a leak.

SYSTEM IMPROVEMENTS

The Niagara Falls Water Board is continually making capital improvements to its distribution system. The following improvements were made in 2011:

1. Replacement of an 8" water main on 97th St. from N.F. Blvd. to 98th St.
2. Replacement of 5 inoperable valves (three 10" and two 6") on Main St. and Cedar Ave. to improve flow and service.
3. Replacement of a broken 10" valve on Hyde Park Blvd. at College Ave. to improve flow.
4. On-going replacement of an 8" water main on Lewiston Rd. from Ontario Ave. to Chestnut Ave to improve flow and service.
5. Purchase of a leak detection device to target distribution leaks in the system.
6. On-going 456 meter pilot study on Cayuga Island and 380 commercial and industrial meter radio meter installations using a mobile reading device to read meters more efficiently, possibly allowing for monthly billing cycles.

CLOSING

Thank you for allowing us to continue to provide your family with quality drinking water this year. 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 at (716) 283-9770 if you have any questions. For other information, you can call the following Monday through Friday 8 AM to 4 PM: Water Billing and Collection – (716) 286-4350

Water Quality Laboratory – (716) 283-9770 ext. 205

Water Related Emergencies 24 hours a day – (716) 283-9770 ext. 201