

Appendix E

Buffalo Water Authority 2018 Drinking Water Report



2018 Annual Drinking Water Quality Report



Consumer Confidence Report
Buffalo, New York

Introduction

To comply with State regulations, Buffalo Water (managed by Veolia NA) 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 State drinking water health standards.

This report is 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. We are pleased to provide you with this information because informed customers are our best customers.

If you have any questions about this report or concerning your drinking water, please contact Jan Robin Ford, Water Treatment Supervisor at (716) 847-1065 ext. 130. We want you to be informed about your drinking water. If you would like to learn more, please attend any of the regularly scheduled Water Board meetings, typically held the second Wednesday of each month at 8:00 AM, Room 502 – City Hall.



Buffalo Water
Managed by Veolia NA, LLC
2 Porter Avenue
Buffalo, NY 14201
PWS ID# NY1400422

MAYOR BYRON W. BROWN

Buffalo Water Board:

Chairperson: Oluwole McFoy, P.E.

Commissioner of Public Works:
Steven J. Stepniak

Members:

Michael Finn, P.E.
Gerald E. Kelly
William Sunderlin

Veolia Water Managers:

Project Manager: David Hill

Operations Manager:
Douglas Fultz, P.E.

Billing & Customer Service
281 Exchange Street
Buffalo, NY 14204

Water Treatment Plant
2 Porter Avenue
Buffalo, NY 14201

Useful Phone Numbers
Customer Service & Emergency:
(716) 847-1065
Water Quality Inquiries:
(716) 847-1065, ext. 133

Website:
www.buffalowater.org

Where does our water come from?

LAKE ERIE FACTS

- **Lake Erie is the 11th largest world lake (4th largest Great Lake by surface area)**
- **Length: 241 miles; Width 57 miles**
- **Average Depth: 62 feet**
- **Max Depth: 210 feet; Vol: 116 miles³**
- **Elevation: 569 feet; Shoreline: 871 miles**
- **Surface Area: 9,910 miles²**
- **Drainage Basin Area: 30,140 miles²**
- **Outlet: Niagara River & Welland Canal**

For health issues, contact:
Erie County Health Dept:
(716) 961-6800

Senior Citizen's Discount,
contact: Dept of Assessments at
(716) 851-5733

Este informe contiene
información muy importante
sobre su agua beber.
Tradúzcalo ó hable con
alguien que lo entienda bien.



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 Federal Environmental Protection Agency (EPA) prescribe regulations which limit the amount of certain contaminants in water provided by public water systems. The State Health Department and the Federal Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Our water source is Lake Erie

(a surface water source) which is the southernmost of the Great Lakes, bounded on the north by the Canadian province of Ontario, on the south by the U.S. states of Ohio, Pennsylvania, and New York, and on the west by the state of Michigan. Lake Erie is the shallowest of the Great Lakes, with an average depth of only 62-ft. It also has the shortest detention time of the Great Lakes. Water remains in the lake for only 2.6 years before it is replaced by fresh water (as compared with 191 years in Lake Superior or 22.6 years in Lake Huron). It is also the siltiest of the Great Lakes. Its bottom consists of fine sand, easily upset during turbulent storms. The combination of its shallowness, short detention time and sandy unstable bottom is especially beneficial to our water quality. The lake is able to flush itself of harmful contaminants such as pesticides and other organic wastes. When Lake Erie becomes turbulent, fine particles of sand and silt become agitated and suspended throughout the lake. Organic contaminants have the propensity to cling to these particles and be flushed from the lake. Therefore, water treatment begins as a natural process due to the structure and makeup of Lake Erie. During 2018, our system did not experience any restriction of our water source.

Customer cost

The average 2018 annual water charge was approximately \$700.00 per year. The total quarterly bill includes the cost of water used and the service charge. Eligible senior citizens receive a discount.

Water Usage (gallons)		Price per 1000 gallons		Quarterly Service Charge as of July 1, 2012			
Monthly	Quarterly	Regular	Seniors	Meter Size	Regular	Seniors	Meter Size
Up to 29,913	Up to 74,793	\$3.05	\$1.84	5/8"	\$34.90	\$17.17	3"
29,920 - 97,240	74,800 - 269,280	\$2.86	\$1.71	3/4"	\$49.22	\$25.86	4"
				1"	\$87.30	\$42.96	5"
over 97,240	over 269,280	\$2.18	\$0.64	1 1/2"	\$174.61	\$86.02	8"
				2"	\$279.19	\$137.42	10"

Abbreviations and Definitions of Terms used in this report:

MCLG (Maximum Contaminant Level Goal): The level of contaminant in drinking water below which there is no known or expected risk to health, MCLGs allows for a margin of safety.

MCL (Maximum Contaminant Level): The highest level of contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as possible.

MRDL (Maximum Residual Disinfectant Level): The highest level of a disinfectant (chlorine) 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 (chlorine) 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 contaminants.

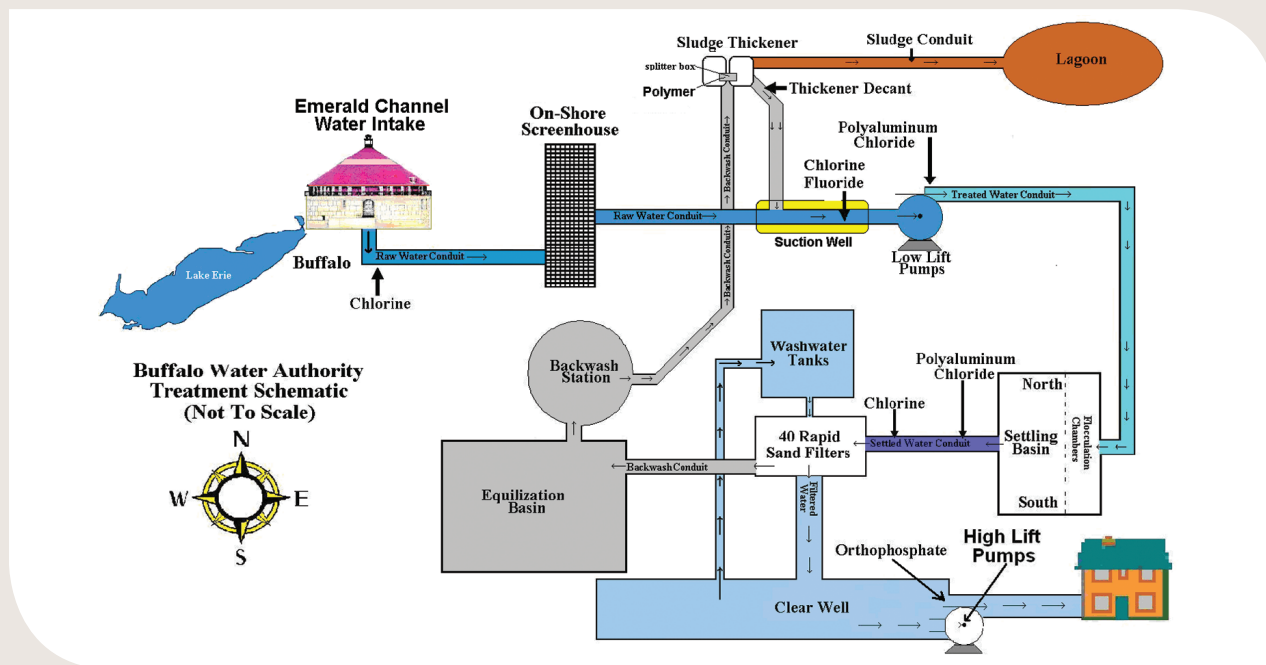
TT (Treatment Technique): A required process intended to reduce the level of contamination in drinking water.

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

NTU (Nephelometric Turbidity Units): A measure of clarity (turbidity) of water, turbidity in excess of 5 NTU is just noticeable to the average person.

Poly/Ortho – phosphate: A chemical blend used as a treatment technique (TT) intended to minimize the potential for lead and copper contamination in drinking water. EPA's Action Level (AL) for lead in water delivered to users of public drinking water systems is 15 µg/L. (parts per billion) Its goal for lead is zero.

Floc: Clumps or tufts formed when suspended particles combine with chemical substance or compound that promotes the combination, agglomeration, aggregation or coagulation of suspended particles in the water.



Sedimentation: The process of suspended solid particles settling out (going to the bottom of the vessel) in water.

Coagulation: Agglomeration of finely divided particles into larger particles, which can then be removed by settling and/or filtration.

ppm: Parts per million, or milligrams per liter (mg/L). Corresponds to one part of liquid in one million parts of liquid.

ppb: Parts per billion, or micrograms per liter (µg/L). Corresponds to one part of liquid in one billion parts of liquid.

ND: Not detected.

N/A: Not applicable.

TTHM (Total Trihalomethane): Organic compounds, which are disinfection by-products of the chlorination of drinking water. Some people who drink water with TTHMs in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.

HAA (Halogenated Acetic Acids): Organic compounds, which are disinfection by-products of the chlorination of drinking water, currently the EPA lists HAAs as a health advisory.

TOC (Total Organic Carbon); **SUVA** (Specific Ultraviolet Absorption): A measure of the organic content of the water. This is a precursor to disinfection by-product when combined with the chlorination of drinking water.

90th % Value: The values reported for lead & copper represent the 90th percentile for each of these contaminants. A percentile is a value

on a scale of 100 that indicates a percent of a distribution that is equal to or below it. The 90th percentile is equal to or greater than 90% of the lead (or copper) values detected at your water system.

RAA: The value in the Running Annual Average (RAA) field is the average of the Monitoring Period Average (MPA) for a year. It is calculated by determining the monitoring periods that began within 365 for the current monitoring period and averaging them.

Stage 2 Disinfection Byproducts (2018)

Sample Site	THM Avg. (range), ppb	HAA Avg. (range), ppb
3396 Bailey	14.3-44.9(25.55)	6.7-23.8 (14.43)
396 Kenmore	16-40.8(25.55)	7.5-17.1(13.15)
2 Templeton Terrace	15.8-23.5 (29.63)	7.7-21.2(16.97)
3043 Main	16.4-44.1 (26.5)	8.9-19.4 (13.9)
262 Grider	15.1-38.8(23.18)	7.9-21.4 (14.53)
150 Reading	24.4-51.9 (35.65)	2.6-9.2(6.83)
24 Westminster	17.4-45.3(26.98)	7.7-21.6 (16.35)
1110 Abbott	19.1-54.7 (31.4)	9.5-17.2 (13.58)
300 Dorrance	19.1-50.6(31.5)	9.4-19.7(13.58)
398 Dingens	15.3-47.3(26.48)	7.3-14.4 (11.85)
1625 Bailey	16.4-38.9 (25.6)	7.5-19(14.5)
939 Abbott	21.3-46.4(30.05)	9.4-25 (18.03)

Source water assessment (SUMMARY)

A source water assessment was completed under the New York State Department of Health (NYSDOH) Source Water Assessment Program (SWAP). The following is the Executive Summary of this report:

“The New York State Department of Health recently completed a draft Source Water Assessment of the raw water supply’s source under the state’s 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 a moderate susceptibility to contamination for this source of drinking water. The amount of agricultural lands in the assessment area results in elevated potential for protozoa and disinfection byproduct precursor contamination. There is also a high density of sanitary wastewater discharges, which results in elevated susceptibility for nearly all contaminant categories.

There is also noteworthy contamination susceptibility associated with other discrete contaminant sources, and these facility types include: Toxics Release Inventory facilities, Chemical Bulk Storage facilities, inactive hazardous waste sites, landfills and Resource Conservation and Recovery Act facilities.”

If you have any questions about the state’s Source Water Assessment Program, please contact the Erie County Health Department at (716) 961-6800.

Water treatment process

Buffalo’s water intake is located in the northeastern region of Lake Erie, just upstream of the Niagara River. This region is known as the Emerald Channel, due to the sparkling clarity of its water. Water enters into the intake through 12 sluice gates and collects in a circular conduit and is conveyed by gravity down 60 feet into to a 12-foot diameter, mile-long tunnel burrowed under the lakebed. Chlorine may initially be applied in this conduit to control zebra and quagga mussels, and provide some disinfection of the water. The water is conveyed by gravity to an onshore screen house at the Colonel Francis G. Ward Pumping Station where traveling screens remove large objects such as fish and other debris that could potentially damage equipment.



Water continues to flow by gravity through the raw water conduit where fluoride and chlorine may be fed. Fluoride is added to guard against tooth decay, and chlorine is added at this location if the feed to the intake is suspended. Six low lift pumps control the amount of water withdrawn from Lake Erie depending on system demands. A poly-aluminum chloride (PACl) coagulant is fed and mixed immediately downstream of the low lift pumps. PACl is a coagulant designed to cause debris in the water to bind together forming floc. The treated water is conveyed into underground basins where flocculation and sedimentation processes occur. During flocculation, the water is slowly mixed by mechanical equipment to enhance floc formation. Following the flocculation process, water enters into the settling portion of the underground basins where the heavy floc is allowed to settle out by gravity. The treated water, still containing light floc, is conveyed to 40 rapid sand/anthracite



filter beds where the filtration process occurs, removing the light floc. A filter aid (PACl) can be added when necessary to enhance filtration and additional chlorine can also be added if needed. Filtered water then enters a 28 million gallon clearwell, where it is stored until needed in the distribution system.

The 40 filters need to be cleaned on a regular basis, which is accomplished by backwashing the filters with potable water. The backwash wastewater generated during the backwash process contains concentrated amounts of light floc removed by the filters. This wastewater is collected and pumped to gravity thickening clarifiers. Clarified backwash water is recycled to the raw water conduit, and the concentrated residuals generated during the thickening process are pumped to a storage lagoon and subsequently to a centrifuge for further processing.



Prior to potable water being pumped into the distribution system, a phosphate based corrosion inhibitor is added, which provides a protective layer inside service connections and plumbing systems, minimizing the potential for contaminants such as lead to leach into drinking water. High lift pumps located at the Colonel Ward and Massachusetts Pumping Stations deliver the treated water to the community. Our in-house laboratory tests the quality and safety of the water at every stage of the treatment process. Additional tests are conducted from samples taken throughout the City, including private homes, businesses and public facilities to ensure our water remains safe.

Facts and figures

Water is essential for all life. Besides drinking, bathing and recreation, water is used to fight fires, and has countless industrial applications. The City of Buffalo treated over 25.7 billion gallons last year averaging over 70.4 million gallons each day for a population of approximately 260,000 people, covering 46 square miles of piping network. On our highest single day, January 12, 2018, we treated over 82.1million gallons of water for distribution.

The distribution system consists of approximately 891 miles of water main pipe (not including hydrant laterals and service connections), 22,936 valves, 74,715 service connections and 7,970 fire hydrants. The distribution system is maintained, day and night, throughout all seasons. In the past year Buffalo Water has replaced or renovated approximately 3.71miles of water mains and replaced 174 hydrants.

2018 TABLE OF DETECTED CONTAMINANTS

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, nitrite, lead and copper, volatile organic compounds, total trihalomethanes, haloacetic acids, radiological and synthetic organic compounds. The following tables present which compounds were detected in your drinking water. The State allows us to test for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, is more than one year old.

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 Erie County Health Department at (716) 961-6800.

Footnotes for table of detected contaminants:
** Water containing more than 20 mg/l of sodium should not be used for drinking by anyone 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.

(1) In 2018, 66 homes were tested during the surveillance period of June 1, 2018 through September 30, 2018. No sample results were above the action level (AL) of 15 ppb for lead or 1.3 ppm for copper. The treatment technique (TT) employed by Buffalo Water, intended to reduce lead and copper contamination of drinking water is the addition of a poly/orthophosphate blend as a part of water treatment. This chemical serves to coat water lines, to prevent lead and copper from leaching into the drinking water. Ingesting copper in excess of the 1.3 ppm AL may result in gastrointestinal distress. Long term exposure to copper above the 1.3 ppm AL may result in liver or kidney damage. Infants and children who drink water containing lead in excess of the AL could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning disabilities. Adults who drink this water over many years could develop kidney problems or high blood pressure. Infants and young children are more vulnerable to lead in drinking water than the general population. Lead levels in your home might 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 you should flush your tap for thirty seconds to two minutes (or until you feel a change in water temperature) before using your tap water. Additional information is available from the Safe Drinking Water Hotline (800) 426-4791, and on Buffalo Water's website. **Compliance testing for lead and copper will occur during the summer of 2020.**

(2) Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system. Our highest single distribution measurement for 2018 occurred on February 6, 2018 (0.59 NTU). State regulations require that the distribution average monthly turbidity must be below 5.0 NTU.

(3) The regulations also require that 95% of the effluent turbidity samples collected have measurements below 0.3 NTU and that no single turbidity measurement be above 1.0 NTU. 100% of all measurements for all of the months met the TT for turbidity (0.3 NTU), and were in the acceptable range allowed and did not constitute a violation.

(4) Representative testing for TTHM included samples collected through 2018. Our highest detected reading occurred on August 24, 2018, 54.7 ppb, which was below the MCL of 80 ppb. Some people who drink water, containing TTHM in excess of the MCL over many years, experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

What does this information mean?

As presented in the Table of Detected Contaminants, our system had no violations for the parameters referenced. We have learned through our testing that some contaminants have been detected; however, these contaminants were detected below the level allowed by the State.

UNDETECTED CONTAMINANTS: According to State regulations, Buffalo Water routinely monitors your drinking water for various contaminants. Your water is tested for inorganic contaminants, nitrate, lead and copper, volatile organic contaminants, synthetic organic contaminants and total trihalomethanes. Additionally, your water is tested for coliform bacteria a minimum of 150 times a month. The contaminants detected in your drinking water are included in the Table of Detected Contaminants. Below is a list of contaminants that were tested for in 2018, but **were not detected** in our drinking water:
1,1,1,2-Tetrachloroethane, 1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,1-Dichloropropene, 1,2,3-Trichlorobenzene, 1,2,3-Trichloropropane, 1,2,4-Trichlorobenzene, 1,2,4-Trimethylbenzene, 1,2-Dichlorobenzene, 1,2-Dichloroethane, 1,2-Dichloropropane, 1,3,5-Trimethylbenzene,

LOCATION	INORGANICS							
	Contaminant	Violation Yes/No	Date of Sample	Level Detected (Min/Max) (Range)	Unit Measurement	MCLG	Regulatory Limit (MCL, TT or AL)	Likely Source of Contamination
ENTRY POINT	Barium	No	4/10/18, 10/10/18	18.3 - 19.3 Avg: 18.8	ppb	2000	2000	Discharge of drilling wastes; discharge from metal refineries; and erosion of natural deposits
	Fluoride	No	4/10/18, 10/10/18	70 - 80 Avg: 74	ppb	N/A	2200	Water additive which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories
	**Sodium	No	5/23/07	11	ppm	N/A	**	Naturally-occurring; road salt; water softeners; animal waste
	Total Chromium	No	4/10/18, 10/10/18	ND - 3.2 Avg: 1.6	ppm	N/A	100	Naturally found in rocks, soil, lava dust and animals.
	Nitrate	No	4/10/18, 10/10/18	70 - 170 Avg: 120	ppb	10	10000	Runoff from fertilizer use; Leaching from septic tanks, sewage, erosion of natural deposits
	Nickel	No	4/10/18, 10/10/18	1.6 - 2.1 Avg: 1.05	ppb	100	100	Nickel can be released into the environment by power plants, metal factories and incinerators. It is also found in runoff from fertilizer use.
DISTRIBUTION	Copper ⁽¹⁾	No	6/1/18-9/30/18	ND - 192 90%= 26	ppb	0	AL = 1300	Corrosion of household plumbing; erosion of natural deposits; leaching from wood preservatives
	Lead ⁽¹⁾	No	6/1/18-9/30/18	ND - 4.8 90%= 2.4	ppb	0	AL = 15	Corrosion of household plumbing; erosion of natural deposits
	MICROBIOLOGICAL							
	Heterotrophic Bacteria	No	1/2/18-12/26/18	0 - 500 Avg: 10	count / ml	N/A	N/A	Naturally occurring
ENTRY POINT	Turbidity ⁽²⁾	No	1/2/18-12/31/18	0.08 - 0.48 Avg: 0.17	NTU	N/A	≤ 5.0	Soil runoff
	Turbidity ⁽³⁾	No	1/2/18-12/31/18	0.07 - 0.38 Avg: 0.12	NTU	N/A	≤ 1.0	
		No		99.86% < 0.3	NTU	N/A	TT: 95% ≤0.3	
	Heterotrophic Bacteria	No	1/2/18-12/26/18	ND - 200 Avg: 5	count / ml	N/A	N/A	Naturally occurring
	TOTAL AND FREE CHLORINE RESIDUALS - DISINFECTANTS							
	Total Chlorine	No	1/1/18-12/31/18	0.97 - 1.80 Avg: 1.42	ppm	N/A	N/A	Water additive used to control microbes
Free Chlorine	No	1/1/18-12/31/18	0.79 - 1.60 Avg: 1.13	ppm	(MRDLG) 4.0	(MRDLG) 4.0		
Free Chlorine	No	1/2/18-12/26/18	0.04 - 1.60 Avg: 0.90	ppm	(MRDLG) 4.0	(MRDLG) 4.0		
DISTRIBUTION	DISINFECTION BYPRODUCTS							
	TTHM ⁽⁴⁾	No	2/13/18-11/21/18	14.3 - 54.7 RAA = 27.9	ppb	N/A	80	By-product of drinking water chlorination needed to kill harmful microorganisms. TTHMs are formed when source water contains large amounts of organic matter.
	HAA	No	2/13/18-11/21/18	2.9 - 25 RAA = 13.8	ppb	N/A	60	By-product of drinking water disinfection needed to kill harmful microorganisms
ENTRY POINT	TOC	No	1/9/18-12/11/18	1.0 - 2.3 Avg: 1.77	ppm	N/A	TT < 2.0	Precursors to by-products of drinking water chlorination
	SUVA	No	1/9/18-12/11/18	0.00 - 8.9 Avg: 1.9	L/mg-m	N/A	TT < 2.0	
	OTHER PROPERTIES OF WATER							
	Total Solids	No	1/24/18-12/21/18	141 - 209 (Average 169)	ppm	N/A	N/A	Naturally occurring
	Total Dissolved Solids	No	1/24/18-12/21/18	58 - 185 (Average 165.9)	ppm	N/A	N/A	
	Alkalinity (as CaCO ₃)	No	1/9/18-11/27/18	86 - 98 (Average 93)	ppm	N/A	N/A	
Calcium Hardness (as CaCO ₃)	No	1/9/18-11/27/18	114 - 128 (Average 118)	ppm	N/A	N/A		
pH	No	1/1/18-12/31/18	7.1 - 7.9 (Average 7.65)	SU	N/A	N/A		
DISTRIBUTION	pH	No	1/2/18-12/31/18	7.0 - 8.3 (Average 7.74)	SU	N/A	N/A	
	Alkalinity (as CaCO ₃)	No	7/9/18-9/26/18	90 - 94 (average 92)	ppm	N/A	N/A	
	Calcium Hardness (as CaCO ₃)	No	7/9/18-9/26/18	114 - 124 (Average 118)	ppm	N/A	N/A	
ENTRY POINT	UNREGULATED CONTAMINANT MONITORING RULE (UCMR3)							
	Molybdenum	No	3/10/15-6/10/15	1-1.2 (Average 1.1)	ppb	N/A	N/A	Naturally occurring and industrial processes
	Strontium	No	3/10/15-6/10/15	160-160 (Average 160)	ppb	N/A	N/A	Naturally occurring
	Chromium, Hexavalent	No	3/10/15-6/10/15	50-90 (Average 70)	ppt	N/A	N/A	Naturally occurring and industrial processes
DISTRIBUTION	4-Androstene-3,17dione	No	3/10/15-6/10/15	.7	ppt	N/A	N/A	Steroid Hormone
	Molybdenum	No	3/10/15-6/10/15	1.0-1.1 (Average 1.05)	ppb	N/A	N/A	Naturally occurring and industrial processes
	Strontium	No	3/10/15-6/10/15	150-160 (Average 155)	ppb	N/A	N/A	Naturally occurring
	Chromium, Hexavalent	No	3/10/15-6/10/15	100	ppt	N/A	N/A	Naturally occurring and industrial processes

1,3-Dichlorobenzene, 1,3-Dichloropropane, 1,4-Dichlorobenzene, 2,2-Dichloropropane, 2-Chlorotoluene, 4-Chlorotoluene, 2,4-D, 3-Hydroxycarbofuron, Alachlor, Aldicarb, Aldicarb Sulfoxide, Aldicarb Sulfone, Aldrin, Antimony, Arsenic, Atrazine, Benzene, Benzopyrene, Beryllium, Bromobenzene, Bromochloromethane, Bromomethane, Butachlor, Cadmium, Carbaryl, Carbon Tetrachloride, Carbofuran, Chlordane, Chlorobenzene, Chloroethane, Chloromethane, cis-1,2-Dichloroethene, cis-1,3-Dichloropropene, Cyanide, Dalapan, Di(2-ethylhexyl)adipate, Di(2-ethylhexyl)phthalate, Dibromomethane, Dicamba, Dichlorodifluoromethane, Dieldrin, Dinoseb Endrin, Ethylbenzene, Heptachlor, Heptachlor Epoxide, Hexachlorobenzene, Hexachlorobutadiene, Hexachlorocyclopentadiene, Isopropylbenzene, Lindane, Mercury, Methomyl, Methoxychlor, Metolachlor, Metribuzin, MTBE, m-Xylene, n-Butylbenzene, Nitrite as Nitrogen, n-Propylbenzene, Oxamyl o-Xylene, p-Isopropyltoluene, Pentachlorophenol, Pichloram, Polychlorinated biphenyls, Propachlor, p-Xylene, sec-Butylbenzene, Selenium, Silvex, Simazine, Styrene, tert-Butylbenzene, Tetrachloroethene, Thallium, Toluene, trans-1,2-Dichloroethene, trans-1,3-Dichloropropene, Trichloroethene, Trichlorofluoromethane, Vinyl Chloride, 2,3,7,8-TCDD(Tetra- Chlorinated dioxin)

Is our water system meeting other rules that govern operations?

Monitoring Violations
We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not your drinking water meets health standards. During 2018, our system was in compliance with applicable state drinking water operations, monitoring, and reporting requirements.

Do I need to take special precautions?

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 provider about their 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 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 (CDC), 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.

Currently there is an interruption to fluoride addition due to capital improvements associated with upgrades to our fluoride system. Since June 22, 2015 fluoride has not been added to your drinking water, and we do not expect fluoride addition to be restored until December, 2018. You may want to discuss this with your family dentist to see if some other form of fluoride supplement should be considered for your dental protection.

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 and the need to construct costly new wells, pumping systems and water towers; and
- 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 firefighting 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:

- Run only full loads in the washing machine and dishwasher. This saves 300 to 800 gallons per month.
- Turn off the tap when brushing your teeth and shaving. This saves three gallons each day.
- Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it 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 an otherwise invisible toilet leak. Fix it and you save more than 30,000 gallons a year.
- Put a plastic bottle or a plastic bag weighted with pebbles and filled with water in your toilet tank. Displacing water in this manner allows you to use less water with each flush. Saves 5 to 10 gallons a day. That's up to 300 gallons a month, even more for large families. Better yet, for even greater savings, replace your water-guzzling 5-7 gallon a flush toilet with a 1.6 gallon, low flush, or 1.28 gallon, ultra-low flush model.
- Avoid flushing the toilet unnecessarily. Dispose of tissues, insects and other similar waste in the trash rather than the toilet.
- Retrofit all household faucets by installing aerators with flow restrictors to slow the flow of water.
- Don't run the hose while washing your car. Use a bucket of

water and a quick hose rinse at the end which may save 150 gallons each time. For a two-car family that's up to 1,200 gallons a month.

- Place a bucket in the shower to catch excess water and use this to water plants. The same technique can be used when washing dishes or vegetables in the sink.
- Use your water meter to detect hidden leaks. Simply turn off all taps and water using appliances, then check the meter after 15 minutes, if it moved, you have a leak.

System Improvements

To insure continuing quality and safety in our communities' water supply, Buffalo Water has made the following improvements to our treatment facility in 2018:

- Security improvements were further implemented at the Colonel Ward and Massachusetts Avenue Pumping Stations.
- Electrical upgrades continued at the Colonel Ward Pump Station and Filtration Plant to improve electrical service and reliability.
- In the distribution system, 174 fire hydrants were replaced and hydrant marker installation continued throughout the City.
- Mechanical and electrical improvements were completed at the Manhattan Tank Pumping Station.
- Distribution system improvements continued including a large valve replacement project, water cut restoration, and rehabilitation/replacement of water mains.
- Continued the City's pilot program for annual lead and copper monitoring with increased customer awareness.
- Corrosion control evaluations continued by SUNY Buffalo, utilizing an on-site pipe loop pilot system.
- An optimal corrosion control study continued, evaluating the overall water treatment process and effects on the distribution system.
- Construction activities involving installation of a new water main under the City Ship Canal at Michigan Avenue were completed.
- Renovation of the Colonel Ward Pumping Station administrative offices as well as the Filtration Plant control room and supervisor offices were completed.
- Roofing improvements to portions of the Colonel Ward Pumping Station and Hydrant Garage were completed.
- Brick repairs to the exterior wall of the stone storage area were completed.
- Design of new primary coagulant and corrosion control facilities commenced, including bulk storage and chemical feed facilities.
- Design of new raw water screening facilities including facility improvements to Screen House commenced.

An absolute commitment to produce the best quality of drinking water available will remain highest priority for Buffalo Water. The planned improvements for 2018 demonstrate this commitment:

- Construction of the primary coagulant and corrosion control systems improvements project.
- Construction of the raw water screening improvements project.
- Evaluation of all below grade water conveyance structures (excluding distribution piping) utilizing remotely operated vehicles (ROV) outfitted with profiling sonar to perform a general conditions assessment of buried infrastructure.
- Control system upgrades will continue. The improved monitoring systems will optimize control over water treatment and plant pumping systems.
- Over 125 hydrants are scheduled to be replaced.
- Building envelope improvements at the Colonel Ward and Massachusetts Avenue Pumping Stations.
- Improve accuracy of metering program by replacing specific groups of meters.
- An optimal corrosion control study will be completed.
- Engineering design of filter wash water supply piping and media replacement will commence.
- Various distribution system improvements (piping, valves) will be designed and constructed.

Metering program

The New York State's Department of Environmental Conservation has mandated that all households and businesses served by Buffalo Water have a water meter installed to insure equitable billing and to foster water conservation. The water meters installed under this program, are read from outside your residence, and accurately bill for the water that has been used, the same way you are currently billed by other utilities. Buffalo Water currently reads and bills metered accounts quarterly. Bills are processed and mailed within approximately 30 days following the previous quarter. If your meter is stopped, or we cannot read your meter, you may receive an estimated bill, which could result in an inaccurate bill. If you receive a notice regarding a problem with your meter, or an estimated bill, you should contact customer service at (716) 847-1065.

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. A copy of the Annual Water Quality Report can be found on Buffalo Water's website (www.buffalowater.org). **Please call our treatment plant supervisor at (716) 847-1065 ext. 130 or the laboratory at (716) 847-1065 ext. 133 if you have questions about water quality. As always, if you are concerned about elevated levels of lead in your home's plumbing, please contact Mayor Byron W. Brown's 3-1-1 Call and Resolution Center to have your water tested for lead by Buffalo Water.**



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