

Annual Drinking Water Quality Report for 2018
Village of Port Dickinson
Port Dickinson, New York
Public Water Supply ID# NY0301672

INTRODUCTION: To comply with State and Federal regulations, this annual report is issued by Port Dickinson Water department describing the quality of your drinking water. The purpose of this report is to raise your understanding of drinking water. The Village of Port Dickinson does not produce our own water. Presently we purchase about 98% of our water from Hillcrest and the other 2% from the City of Binghamton. This means that if you live between Old State Road and Binghamton, you probably get most of your water from Binghamton. If you live between Wayne Ave. and Hillcrest, you probably get most of your water from Hillcrest. Those between Old State Road and Wayne Ave. are getting a mix of both water systems. Last year, both systems met all State Drinking Water Health Standards. This report provides an overview of both water systems.

If you have any questions about this report or your water, please contact Robert Aagre (771-8233) during business hours.

WHERE DOES OUR WATER COME FROM: In general, the sources of drinking water (both tap and bottled) 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 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 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.

Hillcrest water comes from three wells, ranging in depth from 210 feet to 219 feet that draw water from a lower aquifer in the Chenango River Basin. The water is pumped from the wells into two covered storage tanks with a combined capacity of 1,250,000 gallons. The water is disinfected with sodium hypochlorite as it leaves the well field. Polyphosphate sequestrant is added to keep dissolved iron and manganese found in our water in solution.

The City of Binghamton's primary source is the Susquehanna River. The water is withdrawn and treated at a modern, recently renovated water filtration facility. Binghamton also has a back-up groundwater supply, a well of relatively small capacity compared to their normal water demands. The well is typically exercised 8 hours per week and thus supplies less than one-half of one percent of their water. Water pumped from the well is chlorinated before entering the water distribution system.

ARE THERE CONTAMINANTS IN OUR DRINKING WATER: Of course! All drinking water, including bottled 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. Regular testing is conducted on both systems and within Port Dickinson itself, to assure our water meets the accepted standards for the Federal Government and the State of New York. These tests include tests for total coliform, lead and copper and disinfection byproducts.

Included at the end of this report are copies of both water systems' testing result for the year 2018. If these tables present any questions, contact Robert Aagre (771-8233) or stop by the Village Hall during business hours for a more detailed copy.

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.

IS OUR WATER SYSTEM MEETING OTHER RULES THAT GOVERN OPERATIONS? During 2018, our system was in compliance with applicable State drinking water operating, monitoring and reporting requirements.

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 infection. 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).

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:

1. Saving water saves energy and some of the cost associated with both of these necessities of life;
2. Saving water reduces the cost of energy required to pump water and the need to construct costly new wells, pumping systems and water towers.
3. 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:

1. 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.
2. Turn off the tap when brushing your teeth.
3. 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 6000 gallons per year.
4. 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.

SYSTEM MAINTANENCE: Within the Village of Port Dickinson, the public works crew is constantly monitoring our delivery system. If a problem arises, notification and repairs are quickly completed. If you witness or experience any irregularities in the water delivery system, please contact the Village Office or Bob Aage (771-8233).

CLOSING: Thank you for allowing us to continue to serve you. Together, we can continue to provide safe, efficient service at the most reasonable cost possible.

DEFINITION OF TERMS USED IN TABLES:

MAXIMUM CONTAMINANT LEVEL (MCL): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible.

MAXIMUM CONTAMINANT LEVEL GOAL (MCLG): 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 GOAL (MRDLG): The level of 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.

MAXIMUM RESIDUAL DISINFECTANT LEVEL (MRDL): The highest level of a disinfectant residual that is allowed in drinking water.

ACTION LEVEL (AL): The concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a water system must follow.

TREATMENT TECHNIQUE (TT): A required process intended to reduce the level of a contaminant in drinking water.

NON-DETECTABLE (ND): Laboratory analysis indicates that a constituent is not present.

NEPHELOMETRIC TURBIDITY UNIT (NTU): A measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

MILLIGRAMS PER LITER (MG/L): Corresponds to one part of liquid in one million parts of liquid (Parts per million-ppm)

MICROGRAMS PER LITER (UG/L): Corresponds to one part of liquid in one billion parts of liquid (parts per billion ppb)

PICOCURIES PER LITER (pCi/L): A measure of the radioactivity in water.

Following are the Binghamton and Hillcrest Table of Detected Contaminants and the results of the testing done in the Village of Port Dickinson distribution system.

TABLE OF DETECTED CONTAMINANTS FOR PORT DICKINSON

Contaminant	Violation Yes/No	Sample Location	Date of Sample	Level Detected (Range)	Unit Measurement	MCLG	MCL	SOURCE
Lead ¹	No	Distribution	7/15/2016	4.37 (ND – 8.78)	ug/L	0	15	Corrosion of house- hold plumbing systems, erosion of natural deposits.
Copper ¹	No	Distribution	7/15/2016	0.343 (0.0527-0.402)	mg/L	0	1.3	Corrosion of house hold plumbing
Total Trihalomethanes ²	No	Distribution	7/20/2017	1.98	ug/l	N/A	80	Byproducts of drinking water chlorination
Haloacetic Acids ³	No	Distribution	7/20/2017	ND	ug/l	N/A	60	Byproducts of drinking water chlorination

- 1 - The level presented represents the 90th percentile of the sites tested. A percentile is a value on a scale of 100 that indicates the percent of distribution that is equal to or below it. The 90th percentile is equal to or greater than 90% of the lead/copper values detected at your water systems.
- 2 - This level represents the total levels of the following contaminants: chloroform, bromodichloromethane, dibromochloromethane, and bromoform
- 3 - This level represents the total levels of the following contaminants: mono-, di-, and trichloroacetic acid, and mono- and di-bromoacetic acid

Annual Drinking Water Quality Report for 2018
Hillcrest Water District # 1
Hillcrest, New York
Public Water Supply ID# NY0301667

INTRODUCTION

To comply with State regulations, this annual report is issued by the Hillcrest Water District #1, 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. We are proud to report that our system has not violated a maximum contaminant level or any other water quality standard during this reporting period. 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 about this report or concerning your drinking water, please contact the **Town Engineer, at (607) 648 4800 ext. 6**. We want you to be informed about your drinking water. If you want to learn more, please attend any of our regularly scheduled Town Board meetings. The meetings are held on the first Wednesday of the month at 7:00 PM at the Fenton Town Hall, 44 Park Street in Port Crane.

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 Department of Health (DOH) 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 DOH and the Federal Food and Drug Administration's (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Our water system serves approximately 2,800 people through 856 active service connections. We also provide water to The Village of Port Dickinson. Our water source is from deep wells. The well field contains three wells, ranging in depth from 210 feet to 219 feet that draw water from a lower aquifer in the Chenango River basin. The water is pumped from the wells into two covered storage tanks with a combined capacity of 1,250,000 gallons. The total water produced in 2015 was 125,709,000 gallons (54,060,952 gallons to Port Dickinson). The daily average of water treated and pumped to our storage tanks was 344,000 gallons. A 2015 water audit shows that about 22% of the production was lost to hydrant flushing, fire department and other unmetered uses and system leaks.

The water is disinfected with sodium hypochlorite as it leaves the well field. We also add a polyphosphate sequestrant to keep dissolved iron and manganese found in our water in solution.

The current rates for users are \$51.00 for 1000 cubic feet with additional use billed at \$2.00 per 100 cubic feet, thereafter.

A private consultant sponsored by the NYS DOH has completed a source water assessment in 2003. The complete report is available for your review at the Town Engineer's office. A summary report prepared by the Broome County Health Department is attached.

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, and synthetic organic compounds. The table presented below depicts 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. None of the compounds we tested for were detected in your drinking water above the regulatory limit.

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 Broome County Health Department at (607) 778-2887.

Annual Drinking Water Quality Report for 2018

Hillcrest Water District # 1

Hillcrest, New York

Public Water Supply ID# NY0301667

TABLE OF DETECTED CONTAMINANTS – HILLCREST 2018

Contaminant	Violation Yes/No	Well No./ Location	Date of Sample	Level Detected (Avg/Max) (Range)	Unit Measurement	MCLG	Regulatory Limit (MCL or AL)	Likely Source of Contamination
Inorganics								
Barium	No	Treatment Plant	8/21/17	0.209	mg/l	N/A	2.0	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
Sodium ¹	No	#1 #2 #3	8/6/18 8/6/18 8/6/18	24.1 22.4 55.1	mg/l	See Health Effects	N/A	Naturally occurring; Road salt; Water softeners; Animal waste.
Copper ²	No	Distribution	9/20/16	0.490 (0.02-0.59)	mg/l	0	AL = 1.3	Corrosion of household plumbing systems, erosion of natural deposits.
Lead ²	No	Distribution	9/20/16	2.7 (ND – 2.7)	ug/l	0	AL = 15	Corrosion of household plumbing systems, erosion of natural deposits.
Nitrate	No	#1 #2 #3	8/6/18 8/6/18 8/6/18	ND ND 1.28	mg/l	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
Disinfection Byproducts								
Total Trihalo-Methanes ³	No	Distribution	8/6/18	1.16	ug/l	N/A	80	By-products of drinking water chlorination.
Total Haloacetic Acids ⁴	No	Distribution	8/6/18	0.54	ug/l	N/A	60	By-products of drinking water chlorination.
Radiological Contaminants								
Gross Alpha	No	Entry Point	12/13/16	2.13	pCi/l	0	15	Erosion of natural deposits
Radium 226	No	Entry Point	12/13/16	0.235	pCi/l	0	5	Erosion of natural deposits
Radium 228	No	Entry Point	12/13/16	1.08	pCi/l	0	5	Erosion of natural deposits

Notes:

1 - 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.

2 - The level presented represents the 90th percentile of the 10 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 at your water system. In this

case, ten samples were collected at your water system and the 90th percentile value was the ninth highest value. The action level for lead or copper was not exceeded at any of the sites tested.

3 – This level represents the total levels of the following contaminants: chloroform, bromodichloromethane, dibromochloromethane, and bromoform.

4 - This level represents the total levels of the following contaminants: monochloroacetic acid, monobromoacetic acid, dichloroacetic acid, trichloroacetic acid, dibromoacetic acid.

Definitions:

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

Maximum Contaminant Level Goal (MCLG): 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.

Maximum Residual Disinfectant Level Goal (MRDLG): 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.

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

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

Milligrams per liter (Mg/l): Corresponds to one part of liquid in one million parts of liquid (parts per million - ppm).

Micrograms per liter (Ug/l): Corresponds to one part of liquid in one billion parts of liquid (parts per billion - ppb).

Picocuries per liter (pCi/l): A measure of the radioactivity in 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.

IS OUR WATER SYSTEM MEETING OTHER RULES THAT GOVERN OPERATIONS?

During 2018, our system was in compliance with applicable State drinking water operating, monitoring and reporting requirements.

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 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).

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 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 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 check for leaks. Simply turn off all taps and water using appliances. Then check the water meter reading and then again after 15 minutes.*

A WORD ABOUT WATER SYSTEM SECURITY

The water district has an Emergency Response Plan & Vulnerability Analysis and is continuing to implement improvements in the physical plant that will provide additional security for the system. We ask that all our customers help us protect our water sources, which are the heart of our community, our way of life, and our children's future. **Any suspicious activity occurring at any of our water district facilities should be immediately reported to 911, Emergency Management Services, for immediate investigation.**

WATER METER REPLACEMENT PROJECT

As of this writing approximately 715 water meter heads have been replaced with radio frequency meter heads. This replacement project will continue and may take up to 2 more years to complete for all customers. Customers will be notified when they can schedule a visit from the Water District Operator to replace the existing meter head with the new head. Upon replacement, all future readings will be automatically recorded.

CLOSING

Thank you for allowing us to continue to provide your family with quality drinking water this past year. In order to maintain a safe and dependable water supply we sometimes need to make improvements that will benefit all of our customers. The costs of these improvements may be reflected in the rate structure. Rate adjustments may be necessary in order to address these improvements as well as rising operating costs. Please call our office if you have questions.

Town of Fenton
44 Park Street
Port Crane, NY 13833

Annual Water Quality Report for 2018

Binghamton Water Department

Binghamton, New York 13903
Public Water Supply ID# NY0301651

INTRODUCTION

In compliance with State and Federal regulations the BINGHAMTON WATER DEPARTMENT issues an annual report describing the quality of your drinking water. The purpose of this report is to raise your understanding of drinking water and of the need to protect our drinking water sources. In 2018, we conducted tests for over 140 contaminants for each of our two sources. Our primary source is the Susquehanna River and our back-up source is a well. Water produced from both sources was below maximum contaminant levels for all monitored constituents. Monitoring samples taken from the distribution system were in compliance with State standards. 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 drinking water, please contact the **Water Department @ 607-772-7210 during normal business hours**. We want you to be informed about your drinking water and we would be happy to discuss any drinking water issues with you by phone or in person.

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 of New York and the Environmental Protection Agency prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. State Health Department and Food and Drug Administration regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

Our primary source of water is the Susquehanna River, from which water is withdrawn and treated at a modern, recently renovated water filtration facility. We also have a back-up groundwater supply: a well of relatively small capacity compared to our normal water demand. The well is typically exercised 8 hours per week, and thus supplies less than one-half of one percent of our water. Water pumped from the well is chlorinated before entering the water distribution system.

The New York State Department of Health has completed a source water assessment for this system, based on available information. Possible and actual threats to this drinking water source were evaluated. The state source water assessment includes a susceptibility rating based on the risk posed by each potential source of contamination and how easily contaminants can impact the water at the intake. The susceptibility rating is an estimate of the potential for contamination of the source water. It does not mean that the water delivered to consumers is, or will become, contaminated. See section "Are there contaminants in our drinking water?" for a list of the contaminants that have been detected. While nitrate and other inorganic contaminants were detected in our surface and ground water source, 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 from natural sources. The presence of contaminants does not necessarily indicate that the water poses a health risk.

SURFACE WATER ASSESSMENT (SUSQUEHANNA RIVER)

A surface water assessment found an elevated susceptibility to microbial contamination for this source of drinking water. The amount of pastureland in the assessment area results in a high potential for protozoa contamination. While there are some facilities present, permitted discharges do not likely represent an important threat to source water quality based on their density in the assessment area. In addition, it appears that the total amount of wastewater discharged to surface water in this assessment area is high enough to further raise the potential for contamination, particularly for protozoa. There is not any likely contamination threats associated with other discrete contaminant sources, even though discharge contaminants from some facilities were found in low densities. Finally, it should be noted that relatively high flow velocities (i.e.: spring floods) make river drinking water supplies highly sensitive to existing and new sources of microbial contamination.

GROUND WATER ASSESSMENT (OLMSTEAD WELL)

A ground water assessment has rated the Olmstead Well as having a high susceptibility to nitrate and microbial contamination, specifically enteric bacteria, enteric viruses and protozoa. These ratings are due primarily to the proximity of the well to permitted discharge facilities (industrial/commercial and municipal facilities that discharge wastewater into the environment and are regulated by the state and/or federal government) and private sewage disposal, septic systems and agricultural activities in the upstream area. The well is also rated highly susceptible to chemical contaminants because of several contaminant sources identified in the assessment area and a history of low-level chemical contamination, specifically organic compounds. These ratings are also warranted because the well is relatively shallow and draws from an unconfined productive aquifer that may not provide adequate protection from potential contamination. Please note that as stated above, the Olmstead Well contributes a very limited amount of water to the total amount used in the system. While the source water assessment rates our surface water and ground water sources as being moderately to highly susceptible to microbial contamination, please note that our water is disinfected to ensure that the finished water delivered into your home meets New York State's drinking water standards for microbial contamination.

County and state health departments will use this information to direct future source water protection activities. These may include water quality monitoring, resource management, planning, and education programs.

FACTS AND FIGURES

Our water system serves 44,564 people through 14,000 service connections in the City, and wholesales water to parts of the Towns of Binghamton, Dickinson, and Vestal. The total amount of water pumped out of our production facilities in 2018 was 1,796,391,200 Gallons. The daily average for the year was 4.30 million gallons per day with our highest daily production being on October 5th with 7,086,600 gallons pumped. The amount of water billed to all customers was 1,240,215,416 gallons. We attribute the remaining 556,175,784 gallons of water used by the city for firefighting, parks, non-revenue miscellaneous usage, pools and street flushing, a biannual hydrant flushing/flow testing program, and water main breaks and leakage. In 2018, the combined minimum water / sewer bill was \$74.80. This provides 3,740 gallons of water and sewer usage.

ARE THERE CONTAMINANTS IN OUR DRINKING WATER

As the State regulations require, we routinely test your drinking water for numerous contaminants. The contaminants included are: total coliform bacteria (for microbiological quality), turbidity, inorganic group compounds, nitrate, nitrite, lead and copper, volatile organic compounds, total trihalomethanes, haloacetic acids, synthetic organic compounds, and miscellaneous chemical compounds. The contaminants detected in your drinking water are included in the [Table of Detected Contaminants](#).

During 2018, the Binghamton Water Plant performed 772 (600 required by regulations) microbiological tests for coliform in the distribution system. There were no microbiological standard violations. Over 140 other contaminants were tested for during the year with the majority *not being detected*. A complete listing of contaminants we tested for during 2018 is available for inspection at the Water Plant during normal business hours. In the *Table of Detected Contaminants* is a listing of detected contaminants. All have concentrations below the state regulated maximum contaminant level (MCL).

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, could be more than one year old.

It should be noted that all drinking water, including bottled drinking water, might 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 at 800-426-4791, or the Broome County Health Department at 607-778-2887. Also, the National Sanitation Foundation is a nongovernmental source of free information on water quality issues, with a toll-free consumer hotline at 877-8NSF-HELP.

DEFINITIONS OF TERMS USED IN TABLE

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible.

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

Maximum Residual Disinfectant Level (MRDL): The highest level of a disinfectant residual that is allowed in drinking water.

Maximum Residual Disinfectant Level Goal (MRDLG): 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 contamination.

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

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

Non-Detectable (ND): Laboratory analysis indicates that the constituent is not present.

Nephelometric Turbidity Unit (NTU): Turbidity is a measure of the clarity of the water. We use this test as an indication of the effectiveness of the filtration system as a whole. State regulations in force during 2014 require that our effluent (water leaving the plant) is always below 1.0 NTU, and 95% of the turbidity samples collected from our individual filters must have measurements below 0.3 NTU. These samples from the filters are collected every fifteen minutes utilizing our SCADA system and turbidity monitors located at each filter. Turbidity in excess of 5 NTU is just noticeable to the average person.

Milligrams per liter (mg/l): Corresponds to one part of liquid in one million parts of liquid (parts per million - ppm).

Micrograms per liter (ug/l): Corresponds to one part of liquid in one billion parts of liquid (parts per billion - ppb).

Picocuries per liter (pCi/L): A measure of the radioactivity in water.

Locational Running Annual Average (LRAA): The average result of four consecutive quarterly compliance chemical testing series at any one location.

Table of Detected Contaminants							
CONTAMINANT	VIOLATION	DATE	LEVEL DETECTED (Range)	UNIT	MCLG	Regulatory Limit MCL	LIKELY SOURCE OF CONTAMINANT
Microbiological Contaminants							
Coliform Bacteria (*) Distribution	NO	7/10/18 8/23/18 11/7/18	Positive	N/A	0	Any positive sample	Naturally present in the environment.
Inorganics							
Fluoride Plant Well	NO	Daily 3/29/17	(0.60-0.79) 0.150	mg/L	1.0	2.2	Additive for good dental health and Erosion of Natural Deposits
Nitrate Plant Well	NO	12/19/18 12/19/18	0.59 3.5	mg/L	10	10	Runoff from fertilizer, runoff from septic tanks ,sewage, natural erosion
Sodium Plant Well (*1)	NO	6/2/17 6/13/18	18.4 131	mg/L	N/A	None	Natural in soil, road salt, water softeners
Disinfection By Products							
Total Trihalomethanes (*2) Distribution system	NO	Quarterly	39.0 (7.3-84.5)	ug/L	N/A	80	Byproduct of disinfection. TTHM's form when chlorine meets organic matter.
Haloacetic Acids (*3) Distribution system	NO	Quarterly	15.3 (ND-35.2)	ug/L	N/A	60	By product of disinfection. HAA5's form when chlorine meets organic matter.
Chlorite Plant Average Daily High	NO	Yearly	0.02	mg/L	N/A	1.0	By product of in plant generation of chlorine dioxide
Sodium Hypochlorite Plant Average Daily High	NO	Daily	1.51 1.77	mg/L	N/A	4.0	Chemical used in the disinfection of drinking water (as Free Chlorine)
Radiological							
Uranium Well	NO	6/15/16	0.214	pCi/L	0	15	Erosion of natural deposits
Gross Alpha Well	NO	6/28/17 6/15/16	0.052 0	pCi/L	0	15	Erosion of natural deposits
Gross Beta Plant Well	NO	12/11/12 6/15/16	1.92 3.96	pCi/L	0	50	Decay of natural deposits and man-made emissions
Radium 226 Plant Well	NO	6/28/17 6/15/16	0.542 0.439	pCi/L	0	5	Erosion of natural deposits
Radium 228 Plant Well	NO	6/28/17 6/15/16	0.533 0.060	pCi/L	0	5	

*** Notes:**

* - All required repeat coliform samples were negative for coliform.

1 – 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.

2 - This level represents the highest locational running annual average and the range of the following contaminants: Chloroform, Bromodichloromethane, Dibromochloromethane & Bromoform.

3- This level represents the highest locational running annual average and the range of the following contaminants: Monochloroacetic Acid, Monobromoacetic Acid, Dichloroacetic Acid, Trichloroacetic Acid & Dibromoacetic Acid.

UNREGULATED CONTAMINANT MONITORING

The 1996 amendments to the Safe Drinking Water Act (SDWA) require that once every five years, the U.S. Environmental Protection Agency (EPA) issue a new list of no more than 30 unregulated contaminants monitored by public water systems (PWSs). The Unregulated Contaminant Monitoring Rule (UCMR) provides EPA and other interested parties with scientifically valid data on the occurrence of contaminants in drinking water. Unregulated contaminants are those that don't yet have a drinking water standard set by US EPA. The purpose of monitoring for these contaminants is to help EPA decide whether the contaminants should have a standard. The following unregulated contaminants were detected in our water system during 2014 and 2015:

Contaminant	Level Detected	Unit Measurement	Likely Source of Contamination
Strontium	66.3-194	ug/l	Source is erosion of natural deposits.
Chromium	0.23-0.53	ug/l	Discharge from steel and pulp mills, pigments, leather tanning; Erosion of natural deposits.
Chromium-6	ND-0.28	ug/l	Discharge from steel and pulp mills, pigments, leather tanning; Erosion of natural deposits.
Cobalt	ND-1.5	ug/l	Erosion of natural deposits
Chlorate	21-339	ug/l	Disinfection byproduct; Used in the production of chlorine dioxide
1,4-dioxane	ND-0.077	ug/l	Primarily used as a stabilizer for trichloroethane. Also used in a variety of applications as a solvent such as in inks and adhesives.

The following unregulated contaminants were detected in our water system during 2018:

Contaminant	Level Detected	Unit Measurement	Likely Source of Contamination
Total Organic Carbon	2.21 – 2.96	mg/l	Naturally occurring. Tested as a precursor of disinfection byproducts.
Haloacetic Acids*	2.56 – 42.16	ug/l	By-product of drinking water disinfection needed to kill harmful organisms.
Manganese	0.0113 -0.026	mg/l	Source is erosion of natural deposits.

* These levels represent the total levels of the following contaminants: Monochloroacetic Acid, Monobromoacetic Acid, Dichloroacetic Acid, Trichloroacetic Acid, Dibromoacetic Acid, Bromochloroacetic Acid, Bromdichloroacetic Acid, Chlorodibromoacetic Acid, Tribromoacetic Acid

LEAD AND COPPER

In 1994, the City of Binghamton conducted a corrosion optimization study to reduce lead and copper levels in your tap water. The report and study were approved by the New York State Department of Health and the City's corrosion control was deemed optimized. Follow up testing in 1996 and 1999 reaffirmed the study's findings. The City of Binghamton has optimized corrosion control treatment and has had monitoring reduced to once every three years by the New York State Department of Health.

In 2016, the City completed the lead and copper monitoring required under their reduced schedule of a minimum of 30 distribution system (residential) sampling sites every 3 years. The 90th percentile corresponding to 30 samples is the 27th sample in ascending order. In 2019, the City will again sample for lead and copper in the distribution system.

<i>Lead/Copper Results</i>	Violation Yes/No	Date of Sample	Range Results	90 th %tile Results	Unit	MCLG	Reg. Limit 90 th %tile Action Level
Lead	No	2016	< 0.0010-0.0160	0.0077	mg/L	0	0.015
Copper	No	2016	< 0.020 – 0.420	0.190	mg/L	1.3	1.3

During the testing in 2016, the City found one residential home that was at the action level or higher in the lead sampling results. At this time, we are working with this home to help them reduce their lead residual levels. The elevated lead level found in area homes is an isolated incident. In most cases, the results were indicative of an interior plumbing issue rather than a reflection of the source water.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women, infants, and young children. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home’s plumbing. The City of Binghamton 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 (1-800-426-4791) or at <http://www.epa.gov/safewater/lead>.

As a result of the optimization report, other parameters are monitored to ensure that our water quality remained within the guidelines of the study. These parameters are known as Water Quality Parameters. During 2018 we collected samples that pertained to the study, and the results are compiled below.

Parameter	High Level (mg/l)	Low Level (mg/l)	Mean (mg/l)
Alkalinity (as CaCO ₃)	65	16	32
Specific Conductance	289	185	221
Calcium Hardness (as CaCO ₃)	94.8	43.2	64.6
Orthophosphate (as PO ₄)	0.450	0.0100	0.0200
PH	7.68	6.89	7.34
Temperature	87 F	32 F	59.5 F

INFORMATION ON THE ADDITION OF FLUORIDE

Our system is one of many in New York State that provides drinking water with a controlled, low level of Fluoride for consumer dental health protection. Fluoride is added to your water by the Water Filtration Plant and is monitored no less than every four hours by water plant operators and laboratory personnel. According to the Center for Disease Control, Fluoride is very effective in preventing cavities when present in drinking water at an optimal range from 0.6 – 0.8 mg/L. During 2018 monitoring showed Fluoride levels in your water were in the optimal range 100 % of the time. At no time in 2018 did the Fluoride level exceed the MCL of 2.2 mg/L.

WHAT DOES THIS INFORMATION MEAN?

As you can see by the table, our system had no MCL violations in 2018. We also learned through our testing that some other contaminants have been detected; however, these contaminants were detected below the level allowed by the State, as indicated in the table.

IS OUR WATER SYSTEM MEETING OTHER RULES THAT GOVERN OPERATIONS?

During 2018, our system was in compliance with applicable State drinking water operating, 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 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).

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.*
- ♦ *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 aware 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. Partial loads waste money. Fill it to capacity prior to each run.*
- ♦ *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. Repair these fixtures 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, and then check the meter after 15 minutes. If it moved, you have a leak.*

SYSTEM IMPROVEMENTS

- ♦ **The Water Meter Department responded to 5743 service calls with 520 of them direct meter replacements in addition to meter reading and meter change outs. We currently have 340 large meters on radio read including most of our larger buildings and complexes. The Department currently tracks and maintains records for 470 Back Flow Cross Connection devices located in the City of Binghamton and we have several employees certified for back flow testing which take care of our in house devices.**
- ♦ **The Water Distribution Department replaced 13 hydrants, repaired 19 main breaks replaced 20 water services and over 180 feet of new water main including 6 gate valves in addition to standard duties and street reconstruction projects. We also respond to numerous service calls and many late nights and after hour repairs.**
- ♦ **Our Street utility and reconstruction work included 4,117 Feet of new water main ranging from 6” – 12” diameters. 85 new and replaced water service lines. 20 new fire hydrants. 21 new system gate valves. These replacements help us continue to serve our community for years into the future.**

IN 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 to protect our water sources, which are the heart of our community. Please feel free to call the Water Department office for any questions concerning this report or additional information concerning your water.

In conjunction with the City's Fire Department, the Water Department has implemented a color code system for all City fire hydrants. This code system will help the Fire Department during emergency conditions to identify maximum water flow for firefighting. We are asking all city residents to please call 607-772-7210 if hydrants in their area need repair or painting.

We also ask for your help in maintaining security at any of our unmanned remote facilities. If you ever have any concerns with vandalism or suspicious behavior around any City of Binghamton Water facility, please call the Water Department at 607-772-7221 or the Binghamton Police Department at 723-5321.