

City of Mechanicville
Annual Drinking Water Quality Report for 2019

36 North Main Street, Mechanicville, NY 12118
(Public Water Supply Identification Number NY4500166)

INTRODUCTION

To comply with State regulations, the City of Mechanicville, 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 drinking water met all State drinking water health standards. This report is a snapshot 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. Our constant goal is and always has been, to provide to you a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and to protect our water resources. If you have any questions concerning this report or concerning your drinking water please contact: *Mr. Jim Horner; Water Treatment Plant Supervisor, City of Mechanicville Water Department, 33 George Thompson Road, Mechanicville, NY 12118; Telephone (518) 664-3751, Monday – Friday between the hours of 6:00 AM and 2:00 PM.* We want our valued customers to be informed about their water utility. If you want to learn more, please attend any of our regularly scheduled meetings. They are held on the 2nd Wednesday of each month, 7:00 PM at the Mechanicville Senior Citizen Center, 180 North Main Street, Mechanicville, NY 12118; telephone number (518) 664-9884.

WHERE DOES OUR WATER COME FROM?

The City of Mechanicville operates a surface water filtration plant. Two reservoirs feed this system: The Mechanicville Reservoir, located in Luther Woods has a storage capacity of 65 million gallons and is the primary source of water; The Terminal Reservoir, located approximately one mile downstream at George Thompson Road; and the Treatment Plant has a 2.5-million-gallon storage capacity.

The Mechanicville Water Treatment Plant is a U.S. Filter Modular Aquarius (AQ-300B) which consists of flocculation, clarification and filtration for water treatment. The plant is automatically controlled and packaged in (3) steel tanks producing 2,100 gallons/minute. The treatment process consists of coagulation using polyaluminum chloride to cause small particles to stick together when the water is mixed forming larger heavier particles. Sedimentation allows the newly formed larger particles to settle out naturally in inclined tube settlers. The mixed media filter bed consists of anthracite coal, silica sand and garnet sand which removes smaller particles by trapping them in the spaces between the sand grains. Also used in the treatment process is sodium permanganate which is used for taste and odor control, color reduction and iron and manganese oxidation. The filtered water from the treatment unit is fed into the clearwell. The water is then pumped out of the clearwell and chlorinated with liquid sodium hypochlorite. At this point the water flows into two (2) chlorine contact tanks. They are circular; epoxy coated steel bolted steel and concrete tanks with interior baffling and a storage capacity of 250,000 gallons each. The baffling in the tank provides increased detention time and adequate time for the water to be disinfected by the chlorine. Three (3) distribution water pumps operating in lead lag will draw the water from the two chlorine contact tanks into the distribution system and into two (2) steel storage tanks with a combined capacity of 2.5 million gallons to provide adequate fire protection

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 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.

FACTS AND FIGURES

Water is served through approximately 1,500 residential services to a population of approximately 5,200 persons. Water is also supplied to people in Schaghticoke. Our average daily demand is 628,720 gallons. Our single highest day was 1,011,900 gallons. The total water produced in 2019 was 283,080,500 gallons. The amount of water delivered to customers was 229,483,600 gallons. The amount of water lost 53,737,300 gallons or 18.7%. All services are metered. The ratio of water produced to the water billed averages 59%. The City of Mechanicville bills its customers semi-annually for the periods April through September and October through March. The residential water rate for those in the district is \$3.09 per 100 cubic feet (cf) or \$4.13 per 1000 gallons; outside district (Town of Schaghticoke) are billed at \$4.58 per 100 cubic feet or \$6.12 per 1000 gallons. The outside rate for commercial customers is \$5.04 per 100 (cf) or \$6.70 per 1000 gallons. The Pan Am Southern Railroad is billed \$6.09 per 100 (cf) or \$8.10 per 1000 gallons.

ARE THERE CONTAMINANTS IN OUR DRINKING WATER?

In accordance with State regulations, the City of Mechanicville routinely monitors your drinking water for numerous contaminants. We test your drinking water for inorganic contaminants, lead and copper, nitrate, volatile organic contaminants, synthetic organic contaminants and disinfection byproducts. In addition, we test two (9) samples in the distribution system for coliform bacteria each month. The table presented below depicts which contaminants were detected in your drinking water. The state allows us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, is more than one year old and is noted. For a listing of the parameters we analyzed that were not detected along with the frequency of testing for compliance with the NYS Sanitary Code, see Appendix A.

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 pose 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 New York State Department of Health Glens Falls District Office at (518) 793-3893.

WHAT DOES THIS INFORMATION MEAN?

We have learned through our monitoring and testing that some contaminants have been detected; however, these compounds were detected below New York State requirements. MCL's are set at very stringent levels. To understand the possible health effects described for many regulated contaminants, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

IS OUR WATER SYSTEM MEETING OTHER RULES THAT GOVERN OPERATIONS?

During 2019, our system was in compliance with applicable State drinking water operating and reporting requirements. Results of regular monitoring are an indicator of whether or not your drinking water meets health standards. During 2019, we did not sample for the inorganics and secondary inorganics. We were issued a notice of violation for not completing this testing. As soon as we learned of this deficiency, we collected the required samples in January 2020. We will discuss those results in next year's report.

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 microbiological pathogens are available from the Safe Drinking Water Hotline (800-426-4791).

INFORMATION ON LEAD

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Mechanicville is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>

WHAT IS THE SOURCE WATER ASSESSMENT PROGRAM (SWAP)?

To emphasize the protection of surface and ground water sources used for public drinking water, Congress amended the Safe Drinking Water Act (SDWA) in 1996. The amendments require that New York State Department of Health's Bureau of Public Water Supply Protection is responsible for ensuring that source water assessments are completed for all of New York's public water systems.

A source water assessment provides information on the potential contaminant threats to public drinking water sources:

- ◆ each source water assessment will: determine where water used for public drinking water comes from (delineate the source areas)
- ◆ Inventory potential sources of contamination that may impact public drinking water sources
- ◆ Assess the likelihood of a source water area becoming potential contaminated

A SWAP summary for our water supply has been completed by NYSDOH and attached to this report.

WATER CONSERVATION TIPS

The City of Mechanicville encourages water conservation. There are a lot of things you can do to conserve water in your own home. Conservation tips include:

- *Use water saving showerheads*
- *Repair all leaks in your plumbing system*
- *Water your lawn sparingly early morning or late evening*
- *Do only full loads of wash and dishes*
- *Wash your car with a bucket and hose with a nozzle*
- *Don't cut the lawn too short; longer grass saves water*

CAPITAL IMPROVEMENTS

There were no major capital improvements made to the water system in 2019. During 2020 the following projects are planned:

- New PLC
- Dredging the Lower Reservoir
- Connection to the Saratoga County Water Authority

CLOSING

Thank you for allowing us to continue providing your family with clean, quality water this year. In order to maintain a safe and dependable water supply we sometimes need to make improvements that will benefit our customers. You will be informed of system improvements in future Annual Water Quality Reports. We ask that all our customers help us protect our water sources, which are the heart of our community. Please call our office if you have questions.

**Mechanicville City
PWSID NY4500166
AWQR SWAP Summary**

The NYS DOH has evaluated this Public Water System's (PWS) susceptibility to contamination under the Source Water Assessment Program (SWAP), and their findings are summarized in the paragraph below. It is important to stress that these assessments were created using available information and only estimate the potential for source water contamination. Elevated susceptibility ratings do not mean that source water contamination has or will occur for this PWS. This PWS provides treatment and regular monitoring to ensure the water delivered to consumers meets all applicable standards.

This assessment found an elevated 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 pesticides contamination. However, there is reason to believe that land cover data may over estimate the percentage of pasture in the assessment area. No permitted discharges are found in the assessment area.

There are no noteworthy contamination threats associated with other discrete contaminant sources. Finally, it should be noted that hydrologic characteristics (e.g. basin shape and flushing rates) generally make reservoirs highly sensitive to existing and new sources of phosphorus and microbial contamination.

A copy of the full Source Water Assessment, including a map of the assessment area, is available for review by contacting us at the number provided in this report.

CITY OF MECHANICVILLE TABLE OF DETECTED CONTAMINANTS						
Public Water Supply Identification Number NY 4500166						
Contaminant	Violation Y/N	Level Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
Microbiological Contaminants						
Turbidity (highest turbidity sample from 8/14/19) ¹	Y	0.14 ²	NTU	N/A	TT=1.0 NTU	Soil runoff
		100%			TT=95% samples < 0.3	
Inorganic Contaminants (samples from 8/27/18 unless otherwise noted)						
Arsenic	N	2.5	ppb	N/A	10	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes.
Barium	N	35.5	ppb	2000	2000	Naturally occurring
Chloride	N	29.3	ppm	N/A	250	Naturally occurring or indicative of road salt contamination.
Copper (samples from 9/7/17-9/20/17)	N	0.33 ³	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Range of copper concentrations		ND-0.56				
Lead (samples from 9/7/17-9/20/17)	N	7 ³	ppb	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
Range of lead concentrations		ND-24				
Manganese 1/17/19-10/1/19 (average) range	N	13.2 5.6-21.1	ppb	N/A	300	Naturally occurring
Nickel	N	0.68	ppb	N/A	N/A	Erosion of natural deposits
Odor	N	1	units	N/A	3	Natural sources
pH	N	7.81	units		6.5-8.5	
Sodium ⁴	N	17.7	ppm	N/A	N/A	Geology; Road Salt
Sulfate	N	24.2	ppm	N/A	250	Geology
Disinfection Byproducts (Monthly samples from (2/21/19, 5/16/19, 8/15/19 & 11/21/19))						
Stage 2 Haloacetic Acids (HAA5) (Average) ⁵ Range of values for HAA5	N	LRAA1 32.6 ND-48 LRAA2 51.8 (42-59)	ppb	N/A	60	By-product of drinking water chlorination
Stage 2 TTHM Total Trihalomethanes (Average) ⁵ Range of values for TTHM	N	LRAA1 66.1 (42-99) LRAA2 61.0 (40-97)	ppb	0	80	By-product of drinking water chlorination
Chlorine Residual (average) range	N	1.08 0.51-1.46	ppm	MRDLG N/A	MRDL 4	Used in the treatment and disinfection of drinking water
Total Organic Carbon⁶ (monthly samples from 2019)						
Total Organic Carbon Monthly Compliance Ratio	N	1.27-2.53	N/A	Compliance ratio >=1	TT	Organic material both natural and man made; Organic pollutants, decaying vegetation.
Raw Water E. coli Testing Round 2 ^{L12ESESWTR7} (Monthly for 2019)						

Lower Reservoir 2.5 Million Gallons average range	N/A	111.5 5-435	E. coli/100 ml	Average > 100 E. coli/100ml	Human & animal fecal contamination
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FOOTNOTES-

1. 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. Level detected represents the highest level detected. Distribution system turbidity performed 5 times a week with 1.16 NTU being highest level detected and 0.28 NTU being the average level detected.
2. This number represents the weighted average of the 3-individual filter turbidimeters.
3. The level presented represents the 90th percentile of 20 test sites. The action level for copper was not exceeded at any of the 20 sites tested. The action level for lead was exceeded at 1 of the 20 sites tested.
4. Water containing more than 20 mg/l should not be consumed by persons on severely restricted sodium diets.
5. The average is based on a Locational Running Annual Average (LRAA). The average result shown for each of the two sites is the highest LRAA that occurred during 2019. The range of results for each site is also shown. LRAA1 is 4 Industrial Park and LRAA2 is 147 Saratoga Ave. The highest locational running annual averages for Haloacetic acids for LRAA1 occurred during the 1st quarter and at LRAA2 during the 3rd quarter. For the Trihalomethanes the highest LRAA for site 1 was during the 1st quarter and for site 2 was in the 4th quarter.
6. The Interim Enhanced Surface Water Treatment Rule (IESWTR) requires monitoring of raw and finished water Total Organic Carbon (TOC). Depending on the raw water alkalinity value, proper water treatment should remove between 15% to 50% of the raw water TOC thus reducing the amount of disinfection byproducts produced.
7. Under the LT2 (Long Term Enhanced Surface Water Treatment Rule, small surface water or GUIDI systems could monitor for E. coli monthly for 1 year instead of performing more costly Cryptosporidium/Giardia testing to determine treatment requirements for their water sources. An average E. coli concentration greater than 100/100 ml of sample would trigger Cryptosporidium and Giardia monitoring for 24 months. The average for the Lower Reservoir triggered Cryptosporidium/Giardia monitoring which commenced in September 2018 and will conclude August 2020.

Glossary

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

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

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

Picocuries per liter (pCi/L) - picocuries per liter is a measure of the radioactivity in water.

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

90th Percentile Value - The values reported for lead and copper represent the 90th percentile. 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 lead and copper values detected at your water system.

Action Level - the concentration of a contaminant, which, if exceeded, triggers treatment, or other requirements, which a water system must follow.

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

Maximum Contaminant Level - The “Maximum Allowed” (MCL) is the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

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

Locational Running Annual Average (LRAA): The LRAA is calculated by taking the average of the four most recent samples collected at each individual site

N/A-Not applicable

Information on Cryptosporidium

Cryptosporidium is a microbial pathogen found in surface water and groundwater under the influence of surface water. Although filtration removes Cryptosporidium, the most commonly used filtration methods cannot guarantee 100 percent removal. During January 2019 through December 2019, as part of our sampling plan, Lower Reservoir twelve source water samples were collected and analyzed for Cryptosporidium oocysts. 5 samples of the 12 samples collected was presumed positive for Cryptosporidium, and was confirmed positive. Therefore, our monitoring indicates the presence of Cryptosporidium in our source water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of Cryptosporidium may cause cryptosporidiosis, a gastrointestinal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome disease within a few weeks. However, immuno-compromised people are at greater risk of developing life-threatening illness. We encourage immuno-compromised individuals to consult their health care provider regarding appropriate precautions to take to avoid infection.

Information on Giardia

Giardia is a microbial pathogen present in varying concentrations in many surface waters and groundwater under the influence of surface water. Giardia is removed/inactivated through a combination of filtration and disinfection or by disinfection. During January 2019 through December 2019, as part of our sampling plan, twelve samples of our Lower Reservoir source water samples were collected and analyzed for Giardia cysts. Of these samples 9 were confirmed positive for Giardia cysts. Therefore, our monitoring indicates the presence of Giardia in our source water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of Giardia may cause giardiasis, an intestinal illness. People exposed to Giardia may experience mild or severe diarrhea, or in some instances no symptoms at all. Fever is rarely present. Occasionally, some individuals will have chronic diarrhea over several weeks or a month, with significant weight loss. Giardiasis can be treated with anti-parasitic medication. Individuals with weakened immune systems should consult with their health care providers about what steps would best reduce their risks of becoming infected with Giardiasis. Individuals who think that they may have been exposed to Giardiasis should contact their health care providers immediately. The Giardia parasite is passed in the feces of an infected person or animal and may contaminate water or food. Person to person transmission may also occur in day care centers of other settings where handwashing practices are poor.

Appendix A

New York State Sanitary Code Compliance Monitoring Requirements- Compounds Analyzed that were Below Limits of Detection

CITY OF MECHANICVILLE TEST RESULTS					
Public Water Supply Identification Number NY4500166					
CONTAMINANT	MONITORING FREQUENCY		CONTAMINANT	CONTAMINANT	MONITORING FREQUENCY
Asbestos	Every 9 years Waiver from monitoring No asbestos pipe		POC's (Volatile Organic Compounds)		Monitoring requirement is one sample annually. Sample from 1/2/19 Non-Detect
			Benzene	Trans-1,3-Dichloropropene	
Antimony	Monitoring requirement is 1 sample annually Sample from 8/27/18 Non-Detect		Bromobenzene		
			Bromochloromethane	Ethylbenzene	
			Bromomethane	Hexachlorobutadiene	
Beryllium			N-Butylbenzene	Isopropylbenzene	
Cadmium			sec-Butylbenzene	p-Isopropyltoluene	
Chromium			Tert-Butylbenzene	Methylene Chloride	
Cyanide			Carbon Tetrachloride	n-Propylbenzene	
Nitrate			Chlorobenzene	Styrene	
Mercury			2-Chlorotoluene	1,1,1,2-Tetrachloroethane	
Selenium			4-Chlorotoluene	1,1,2,2-Tetrachloroethane	
Silver			Dibromomethane	Tetrachloroethene	
Thallium			1,2-Dichlorobenzene	Toluene	
Fluoride			1,3-Dichlorobenzene	1,2,3-Trichlorobenzene	
Beryllium			1,4-Dichlorobenzene	1,2,4-Trichlorobenzene	
			Dichlorodifluoromethane	1,1,1-Trichloroethane	
		1,1-Dichloroethane	Trichloroethene		
		1,2-Dichloroethane	Trichloroethene		
Color	Monitoring requirement is at State discretion Sample from 8/27/18 Non-Detect		1,1 Dichloroethene	Trichlorofluoromethane	
Zinc			cis-1,2 Dichloroethene	1,2,3-Trichloropropane	
			Trans-1,2-Dichloroethene	1,2,4-Trimethylbenzene	
Iron			1,2 Dichloropropane	1,3,5-Trimethylbenzene	
Nitrate			1,3 Dichloropropane	m-Xylene	
			2,2 Dichloropropane	o- Xylene	
			1,1 Dichloropropene	p-Xylene	
			Cis-1,3-Dichloropropene	Vinyl Chloride	
			Total Coliform / E. coli		Monitoring is 9 samples/ month Non-Detect
		Radiological Parameters			
Turbidity Entry Point	See test results table footnotes		Gross Alpha/Beta particle activity		Monitoring is one sample every 6-9 years 2/28/14 Non-Detect
Turbidity Distribution System	See test results table footnotes		Radium 226 & 228		
Regulated & Unregulated Synthetic Organic Chemicals					
Synthetic Organic Chemicals (Group I)			Synthetic Organic Chemicals (Group II)		Monitoring requirement is every 18 months 4/18/19 Non-Detect *State waiver does not require monitoring these compounds
Alachlor	Aldicarb		Aldrin	Benzo(a)pyrene	
Aldicarb Sulfoxide	Aldicarb Sulfone		Butachlor	Carbaryl	
Atrazine	Carbofuran		Dalapon	Di(2-ethylhexyl) adipate	
Chlordane	Dibromochloropropane		Di(2-ethylhexyl) phthalate	Dicamba	
2,4-D	Endrin		Dieldrin	Dinoseb	
Ethylene Dibromide	Heptachlor		Diquat*	Endothall*	
Lindane	Methoxyhlor		Glyphosate*	Hexachlorobenzene	
PCB's	Toxaphene		Hexachlorocyclopentadiene	3-Hydroxycarbofuran	
2,4,5-TP (Silvex)			Methomyl	Metolachlor	
			Metribuzin	Oxamyl vydate	
			Pichloram	Propachlor	
			Simazine	2,3,7,8-TCDD (Dioxin)*	

