

Annual Drinking Water Quality Report for 2020

Village of Menands

280 Broadway, Menands, NY 12204

(Public Water Supply Identification Number NY0100200)

INTRODUCTION

To comply with State regulations the Village of Menands annually issues a report describing the quality of your drinking water. The purpose of this report is to raise both community understanding of drinking water and awareness of the need to protect drinking water sources. We are very pleased to provide you with this Annual Water Quality Report, which provides an overview of the Village's water quality in 2020. Included are details about where your water comes from, what it contains, and how it compares to New York State standards. In 2020, there was one violation of drinking water standards for an exceedance in Total Trihalomethanes, as described later in this report.

Our constant goal is and always has been to provide you a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water supply and to protect our water resources. If you have any questions concerning this report or concerning your drinking water please contact: *Mr. Sean Connors, Sub-Foreman/ Operator, 280 Broadway, Menands, NY 12204; Telephone (518) 434-2922.* We want our valued customers to be informed about their water service. If you want to learn more, please attend any of our regularly scheduled Village Board meetings. They are held on the 1st and 3rd Monday (Tuesday if Monday is a holiday) of each month at 6:00 PM in the *Municipal Building, 250 Broadway, Telephone (518) 434-2922.* Meetings are held virtually as required by New York State.

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

The Village of Menands purchases its water from the City of Troy under a contract arrangement that has been in place since the 1950's. The City of Troy draws its water from a surface water supply, the spring fed Tomhannock Reservoir, located to the northeast of the City. Generally, water flows by gravity from the Tomhannock Reservoir to the John P. Buckley Water Treatment Plant (WTP), a complete treatment facility. Before treatment at the WTP, the City adds potassium permanganate at the Tomhannock Reservoir in an effort to lower the formation of disinfection byproducts (DBPs) that may be formed by downstream treatment processes. Potassium permanganate is a strong oxidant used to oxidize iron and manganese, and does not produce the DBPs that chlorine does. Potassium permanganate is fed seasonally from mid-June to September/October depending on the iron and manganese concentrations in the raw water. The City of Troy then adds chlorine dioxide year-round at Melrose Station to oxidize any organic material native to the raw water to further reduce the formation of DBPs. Unlike chlorine, chlorine dioxide does not form DBPs like THM's or HAA5's. Finally, the partially treated water flows to the WTP where conventional treatment practices like coagulation,

flocculation, sedimentation, filtration, and chlorination occur. The City continuously monitors free chlorine residuals and modifies disinfectant doses to ensure adequate residual disinfection levels. The City also adds fluoride to promote public health and to protect teeth against dental cavities. During 2020 there were no source water restrictions.

Finished water from the WTP is transmitted to the Village by way of a 20-inch diameter pipeline that is encased in concrete and which runs under the Hudson River. Water is pumped into our distribution system and into two covered concrete reservoirs with a combined total storage capacity of 2,270,000 gallons. Storage allows us to meet consumer demand and provide adequate fire protection. We maintain a pressure booster pumping station for our residents in the Sky Hollow/Sage Hill Lane areas. In the event of an emergency, there are interconnects via two 10-inch diameter pipelines with the City of Watervliet and the Latham Water District.

WHAT IS THE SOURCE WATER ASSESSMENT PROGRAM (SWAP)?

To emphasize the protection of surface and groundwater sources used for public drinking water, Congress amended the Safe Drinking Water Act (SDWA) in 1996. The amendments require the New York State Department of Health's Bureau of Public Water Supply Protection to ensure that individual Source Water Assessments (SWAs) 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 SWA 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 potentially contaminated

The NYSDOH has completed a SWA for the Tomhannock Reservoir. The Source Water Assessment, as summarized below, includes a susceptibility rating based on the risk posed by each potential source of contamination and how likely contaminants could enter the reservoir. The susceptibility rating is an estimate of the potential for contamination. It does not mean that the water delivered to your home is or will become unsafe to drink. See Section "Are There Contaminants in Our Drinking Water?" of this report for information concerning levels of contaminants in your water.

The SWA found that the significant area of pastureland within the assessment area results in a potential for protozoa contamination. Additional susceptibility was determined due to the presence of landfills within the assessment area. It should be noted that hydrologic characteristics (e.g. basin shape and flushing rates) generally make reservoirs sensitive to existing and new sources of phosphorus and microbial contamination. It should also be noted that the City of Troy's WTP performs multi-level treatment to ensure that residents of Troy and purchasers of their treated water (like the Village of Menands) receive safe drinking water. 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.

FACTS AND FIGURES

The Village provides water through 1,036 service connections to a resident population of approximately 3,990 people. All services are metered. Our average daily demand was 905,000 gallons and the single highest daily demand was 1,480,000 gallons. The total water purchased from Troy in the billing period between November 1, 2019 and October 31, 2020 was 358,100,000 gallons. Of the total water purchased, a volume of 238,670,000 gallons was delivered directly to customers. As a result, a total of 119,430,000 gallons (or 33%) is considered "unaccounted for water". This can be attributed to water usage for fire protection, water system flushing/maintenance, and losses in the transmission and distribution system (water main breaks and leaks). A major leak was repaired in early February 2020 which contributed to a significant reduction in water loss when compared to data from 2019. The Village

regularly has comprehensive leak detection surveys performed on their system. The charge for water during the last billing cycle was \$4.109 per 1000 gallons.

ARE THERE CONTAMINANTS IN OUR DRINKING WATER?

In accordance with State regulations, the Village’s drinking water is routinely monitored for myriad contaminants by the City of Troy, the source of the Village’s public water system (see Appendix A – City of Troy 2020 Table of Detected Contaminants). The City of Troy regularly tests for total coliform bacterial, inorganic contaminants, radiological contaminants, lead and copper, turbidity, nitrate, volatile organic contaminants, disinfection byproducts, and synthetic organic contaminants. The Village supplements the City’s sampling and tests for lead, copper, and disinfection byproducts. The Village is also required to test a minimum of five samples for coliform bacteria each month, however, we usually test six. The table presented below summarizes the Village’s test results for 2020 (contaminants tested for but not detected are omitted). Note that the State allows public water systems to test for some contaminants less frequently than once per year. These contaminants are known to exhibit stable concentrations that vary infrequently. Some of the data, though representative of the water quality, 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 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 Albany County Health Department at (518) 447-4620.

MENANDS WATER DEPARTMENT TABLE OF DETECTED CONTAMINANTS FOR 2020 Public Water Supply Identification Number NY 100200						
Contaminant	Violation Y/N	Level Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
Inorganic Contaminants (Samples from 5/7/19 unless otherwise noted)						
Copper* Range	N	0.0309 ¹ 0.006-0.185	mg/L	1.3	(AL) 1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead Range	N	0.0032 <0.0010-0.010	mg/L	0.0	(AL) 0.015	Corrosion of household plumbing systems; erosion of natural deposits;
Disinfection Byproducts (Quarterly Samples from 2/20, 5/20, 8/20, & 11/20)						
Stage 2 Haloacetic Acids (HAA5) Highest LRAA Range of values for HAA5	N	50.2 ² 17.1-62.9 ³	ppb	N/A	60	Byproduct of drinking water disinfection needed to kill harmful organisms.
Stage 2 TTHM Highest LRAA Range of values for TTHM	Y	81.6 ² 37.3-111	ppb	0	80	Byproduct of drinking water chlorination needed to kill harmful organisms. TTHMs are formed when source water contains organic matter.
1. The level presented represents the 90th percentile of the 30 samples collected. The action level for copper was not exceeded at any of the 30 sites tested. 2. The level presented represents the highest Locational Running Annual Average (LRAA) witnessed in 2020. 3. The range presented represents the highest and lowest quarterly sampling values witnessed in 2020.						

Definitions:

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.

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

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 (AL) - 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.

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.

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.

WHAT DOES THIS INFORMATION MEAN?

The table shows that our system has a violation this year. Specifically, the LRAA calculated for TTHM exceeded the listed MCL at one of the two testing locations within the Village. The LRAA, which is a calculated average of testing results from quarterly sampling, was impacted by an uncharacteristically high sampling result from the third quarter of 2019. Following the elevated 2019 result, we made modifications to the disinfection system and our chlorine residual management which reduced the TTHM level. Although concentrations of TTHM tend to oscillate seasonally with source water temperature, quarterly test results from 2020 show a general downward trend in TTHM LRAA. LRAA calculations show that TTHM concentrations were within acceptable ranges for the second half of 2020 and the downward trend has continued for the early 2021 sampling. Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have a risk of getting cancer. The data suggests that the TTHM MCL exceedance was a short-term anomaly, however, the Village is aware of the issue and is monitoring TTHM data closely. Corrective measures will be considered and implemented if TTHM consistently exceeds the listed MCLs.

The information presented in Appendix A shows that the City of Troy was free from violations related to drinking water standards in 2020.

IS OUR WATER SYSTEM MEETING OTHER RULES THAT GOVERN OPERATIONS?

During 2020, our system complied with applicable State drinking water operating, monitoring and reporting requirements.

DO I NEED TO TAKE SPECIAL PRECAUTIONS?

Although our drinking water largely 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).

INFORMATION ON FLUORIDE ADDITION

Our system is one of many drinking water systems in New York State that provides drinking water with a controlled, low level of fluoride for consumer dental health protection. Fluoride is added to the water we purchase by the City of Troy before it is delivered to us. According to the United States Centers for Disease Control, fluoride is very effective in preventing cavities when present in drinking water at a controlled level. To ensure that the fluoride supplement in your water provides optimal dental protection, the City of Troy monitors fluoride levels daily to make sure fluoride is maintained at a target level of 1.0 mg/l. During 2020 monitoring showed fluoride levels in your water were in the optimal range (0.7ppm – 1.2ppm) 100 % of the time. None of the monitoring results showed fluoride at levels that approach the 2.2 mg/l MCL for fluoride.

INFORMATION ON LEAD

We are required to present the following information on lead in drinking water:

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 Troy and the Village of Menands are 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>

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 several 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:

- ◆ 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 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.

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. 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.

Appendix A - City of Troy Table of Detected Contaminants

Contaminant	Violation Yes/No	Date or Frequency of Sample	Level Detected			Unit Measurement	MCLG MRDLG	Regulatory Limit (MCL, TT, MRDL, AL)	Likely Source of Contamination
			Value or Average	Low	High				
Physical and Chemical Analytes									
pH	No	Daily	8.53	6.24	9.00	-	-	NDL	Adjusted at WTP
Temperature	No	Daily	13.0	3.6	24.9	° C	n/a	NDL	-
Color	No	Daily	0	0	7	color units	n/a	15	Naturally occurring
Turbidity	No	Daily	0.43	0.06	2.00	NTU	n/a	5	Soil runoff
Chlorine	No	Daily	0.79	0.12	1.12	mg/L	4	4.0	Added disinfectant
Chlorine Dioxide	No	Daily	0.014	0.00	0.15	mg/L	0.8	0.8	Added disinfectant
Fluoride	No	Daily	0.79	0.37	0.99	mg/L	n/a	2.2	Adjusted at WTP
Alkalinity, as CaCO ₃	No	Daily	41.2	23.4	47.2	mg/L	n/a	NDL	Naturally occurring
Hardness, as CaCO ₃	No	Weekly	52.3	47.0	58.0	mg/L	n/a	NDL	Naturally occurring
Iron	No	Weekdays	0.02	0.00	0.05	mg/L	n/a	0.3	Naturally occurring
Manganese	No	Weekdays	0.017	0.00	0.04	mg/L	n/a	0.3	Naturally occurring
Disinfection By-Products									
Trihalomethanes (THM)									
Campbell Ave FS	No	Quarterly	57.8	41.1	94.7	ug/L	n/a	80.0	THM & HAA formed by reaction of Chlorine with naturally occurring organic material.
Griswold Heights	No	Quarterly	77.3	66.4	92.7	ug/L	n/a	80.0	
Cookie Factory	No	Quarterly	65.6	37.2	98.9	ug/L	n/a	80.0	
Deli & Brew	No	Quarterly	61.5	49.9	81.9	ug/L	n/a	80.0	
Haloacetic acids (HAA)									
Campbell Ave FS	No	Quarterly	34.3	23.6	42.2	ug/L	n/a	60.0	Chlorite & Chlorate formed by the reaction of Chlorine Dioxide with naturally occurring organic material
Griswold Heights	No	Quarterly	36.4	22.4	47.3	ug/L	n/a	60.0	
Cookie Factory	No	Quarterly	40.2	23.3	48.8	ug/L	n/a	60.0	
Deli & Brew	No	Quarterly	33.4	22.7	41.0	ug/L	n/a	60.0	
Chlorite	No	Monthly	0.83	0.59	1.09	mg/L	n/a	1.00	
Chlorate	No	Monthly	0.17	0.08	0.27	mg/L	n/a	n/a	
Lead and Copper									
Lead *	No	Annually	0.0032	<0.0010	0.010	mg/L	0.00	(AL) 0.015	Household plumbing corrosion, erosion of natural deposits.
Copper *	No	Annually	0.0309	0.006	0.185	mg/L	1.30	(AL) 1.30	
Inorganic Chemicals									
Barium	No	7/1/2020	0.0301	-	-	mg/L	2.0	2.0	Naturally occurring
Chloride	No	7/1/2020	17.9	-	-	mg/L	n/a	250.0	Naturally occurring or road salt
Nitrate-as N	No	7/1/2020	0.2	-	-	mg/L	10.0	10.0	Runoff from fertilizer
Sodium **	No	9/15/2020	12.3	-	-	mg/L	n/a	**	Naturally occurring
Sulfate	No	7/1/2020	12.0	-	-	mg/L	n/a	250.0	Naturally occurring
Radiological									
Gross Alpha Particles	No	3/11/2016	-0.840	1 sample every 6 years		pCi/l	0	15.0	Naturally occurring
Gross Beta Particles	No	3/11/2016	0.681			pCi/l	0	4.0	Naturally occurring
Radium 226	No	3/11/2016	0.456			pCi/l	0	5.0	Naturally occurring
Radium 228	No	3/11/2016	-0.144			pCi/l	0	5.0	Naturally occurring
Total Uranium	No	3/11/2016	0.167			ug/L	0	30.0	Naturally occurring

TABLE OF NON-DETECTED CONTAMINANTS

Inorganic Chemicals			Organic Chemicals			
Antimony	Chromium		2,4,5-TP (Silvex)	Aldicarb Sulfoxide	Heptachlor	Pentachlorophenol
Arsenic	Cyanide	Selenium	2,4-D	Atrazine	Heptachlor Epoxide	Toxaphene
Asbestos	Mercury	Silver	Alachlor	Carbofuran	Lindane	Vinyl Chloride
Beryllium	Nickel	Thallium	Aldicarb	Chlordane	Methoxychlor	PFC's
Cadmium	Nitrite-as N	Zinc	Aldicarb Sulfone	Endrin	PCB's	1,4-Dioxane

MICROBIOLOGICAL TABLE

Coliform	No	Weekdays	0.38%	-	-	%	0	5%	Naturally occurring
E.Coli ***	No	Weekdays	0	-	-	-	0	***	Human/animal fecal waste