

Annual Drinking Water Quality Report for 2011

City of Rensselaer

62 Washington Street, Rensselaer, NY 12144
(Public Water Supply Identification Number NY4100044)

INTRODUCTION

To comply with State regulations, the City of Rensselaer, 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 an overview of last year's water quality. Included are details about where your water comes from, what it contains, and how it compares to New York State standards. 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. Tom Capuano, Commissioner of Water, City of Rensselaer, 62 Washington Street, Rensselaer, NY 12144-2628; Telephone (518) 462-9616.* 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 City Council meetings. They are held on the 1st and 3rd Wednesday of each month, 7:00 PM at the City Hall, 62 Washington Street, and Telephone (518) 462-9511.

WHERE DOES OUR WATER COME FROM?

The City of Rensselaer purchases its water from the City of Troy. Water is supplied to us under a contract arrangement. The City of Troy draws its water from a "surface water" supply, the spring fed Tomhannock Reservoir. It is located to the northeast of the City of Troy. Water flows from the Tomhannock Reservoir to the Troy Water Treatment Plant (TWTP), a complete treatment facility. In an effort to lower the formation of disinfection byproducts (DBBPs), TWTP has started to add potassium permanganate at the Tomhannock Reservoir. Potassium permanganate is a strong oxidant that is used to oxidize iron and manganese, but does not produce the DBBPs that chlorine does. Potassium permanganate is being fed seasonally from mid June to about September or October depending on the iron and manganese levels in the raw water. Additionally chlorine dioxide is added at Melrose Station to oxidize the organic material that leads to the formation of disinfection byproducts when it reacts with chlorine but unlike chlorine, chlorine dioxide does not form DBBPs like THM's or HAAS's. Chlorine dioxide is fed year-round. They also add fluoride at low levels to protect teeth against dental cavities. Finished water from the Troy WTP is piped to our distribution system. We have a 2 million gallon storage tank and two new 5 million gallon storage tanks to meet consumer demand and provide adequate fire protection. The 4 million gallon storage tank shared with the Town of East Greenbush has been removed from service

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

The City provides water through 3,000 service connections to a population of approximately 9,010 people. In 2011 we purchased 1,045,391,000 gallons of water from the City of Troy. Our average daily demand is approximately 3,111,200 gallons. Our single highest day was 5,998,000 gallons. Approximately 65% of the total amount of water purchased from Troy was billed directly to consumers. The balance of approximately 32%, or unaccounted for water, was used for fire fighting purposes, hydrant use by City trucks for street sweeping, distribution system leaks and unauthorized use. Residential customers in the City are charged \$5.95 per thousand gallons of water. Residential customers are billed semi-annually with a minimum charge of \$75.00/15,000 gallons. Commercial customers are billed monthly with a minimum charge of \$45.00. *However, we also serve a few customers in North Greenbush through contract agreement.*

ARE THERE CONTAMINANTS IN OUR DRINKING WATER?

In accordance with State regulations, the City of Rensselaer routinely monitors your drinking water for numerous contaminants. We test your drinking water for inorganic contaminants, radiological contaminants, lead and copper, nitrate, volatile organic contaminants, and synthetic organic contaminants. In addition, we are required to test a

minimum of ten samples 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 Rensselaer County Health Department (518) 270-2626.

WHAT DOES THIS INFORMATION MEAN?

As you can see from the attached tables, our system had no violations. We have learned through our monitoring and testing that some constituents 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 constituents, 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 2011, 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 microbiological pathogens are available from the Safe Drinking Water Hotline (800-426-4791).

INFORMATION ON FLUORIDE ADDITION

Our system is one of the many drinking water systems in New York State that provides drinking water with a controlled, low level of fluoride for consumer dental health protection. Fluoride is added to your water by the City of Troy Water Department 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 an optimal range from 0.8 to 1.2 mg/l (parts per million). To ensure that the fluoride supplement in your water provides optimal dental protection, the State Department of Health requires that the City of Troy Water Department monitor fluoride levels on a daily basis. During 2011 monitoring showed fluoride levels in your water were in the optimal range 95% 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

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 Rensselaer 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 the Troy Water supply is attached to this report.

WATER CONSERVATION TIPS

Although the City is fortunate to have a good supply of water coming from Troy and water restrictions are a rarity, we encourage all residents to conserve. The following are just a few of the simple measures that can be implemented:

- ◆ Only run the dishwasher and clothes washer when there is a full load.
- ◆ Use water saving showerheads.
- ◆ Install faucet aerators in the kitchen and the bathroom to reduce the flow from 4 to 2.5 gallons per minute.
- ◆ Water garden and lawn for only a couple of hours after sunset.
- ◆ Check and repair all leaks in toilets, faucets and outside spigots.
- ◆ Cover swimming pools during hot spells, thereby reducing the need to replenish water.
- ◆ Instead of hosing, sweep driveways and sidewalks.
- ◆ Turn water off and on while washing hands, brushing teeth, shaving etc.
- ◆ Check your toilets for leaks by putting a few drops of food coloring in the tank. Watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from an invisible toilet leak. 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.

Not only will these steps conserve precious water resources, they will reduce your water bills.

CAPITAL IMPROVEMENTS

- ◆ During 2011 we replaced water lines and lead services on Broadway from Routes 9 & 20 to the Viaduct Bridge.

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. Please call our office if you have questions at (518) 462-6466.

Tomhannock Reservoir Source Water Assessment Summary

The NYS DOH has completed a Source Water Assessment for the Tomhannock Reservoir. The assessment is summarized below. The assessment includes a susceptibility rating based on the risk posed by each potential source of contamination and how likely contaminants could enter the reservoir(s). 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 low levels of contaminants in your water.

The assessment found the amount of pasture in the assessment area results in a potential for protozoa contamination. There is also possible contamination susceptibility associated with landfills in 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.

Troy's water treatment plant performs multi level treatment to insure that Troy and Rensselaer residents receive safe drinking water. Additionally, as this annual report shows your water is routinely monitored for a great number of potential contaminants.

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

CITY OF RENSSELAER TABLE OF DETECTED CONTAMINANTS						
Public Water Supply Identification Number NY4100044						
Contaminant	Violation Y/N	Level Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
Inorganic Contaminants						
Copper (samples from 6/15/11-7/1/11) Range of copper concentrations	N	0.05 ¹ ND-0.07	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (samples from (samples from 6/15/11-7/1/11) Range of lead concentrations	N	1 ² ND-8	ppb	0	AL=15	Corrosion of household plumbing systems; erosion of natural deposits;
Disinfection Byproducts (samples from 2/17/11, 5/22/11, 8/4/11 & 11/21/11)						
Haloacetic Acids (HAA5) ³ Range of values for HAA5	N	26.3 15.9-34	ppb	N/A	60 ⁵	By-product of drinking water chlorination.
TTHM[Total Trihalomethanes](Average) ³ Range of values for TTHM	N	69.2 51.7-98.9	ppb	0	80	By-product of drinking water chlorination
Chlorine Residual, Free (average) Range	N	0.96 0.3-1.5	ppm	MRDLG N/A	MRDL 4	Used in the treatment and disinfection of drinking water
Stage 2 Disinfection Byproducts ⁴ (samples from 2/12/10 & 5/10/10)						
Haloacetic Acids (HAA5) ³ Range of values for HAA5	N	25.5-56	ppb	N/A	60	By-product of drinking water chlorination
TTHM[Total Trihalomethanes] Range of values	N	46-72.9	ppb	0	80	By-product of drinking water chlorination
Notes						
1. The level presented represents the 90 th percentile of 20 test sites. 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, 20 samples were collected at your water system and the 90th percentile value was the 18 th sample with the third highest value (level detected 0.05 mg/l). The action level for copper was not exceeded at any of the sites tested.						
2. The level presented represents the 90 th percentile of 20 test sites. The action level for lead was not exceeded at any of the 20 sites tested						
3. The average is based on a running annual average. The average shown is the highest RAA for 2011. The highest TTHM & HAA5 RAAs were in the 4 th Qtr 2011.						
4. The Stage 2 study consisted of taking 4 samples every 90 days to determine future sample locations for routine disinfection byproduct sampling. The study was concluded with the May 2010 samples.						
<i>Non-Detects (ND)</i> - laboratory analysis indicates that the constituent is not present.						
<i>Parts per million (ppm) or Milligrams per liter (mg/l)</i> - one part per million corresponds to one minute in two years or a single penny in \$10,000.						
<i>Parts per billion (ppb) or Micrograms per liter</i> - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.						
<i>Picocuries per liter (pCi/L)</i> - picocuries per liter is a measure of the radioactivity in water.						
<i>Nephelometric Turbidity Unit (NTU)</i> - nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.						
<i>Action Level</i> - the concentration of a contaminant, which, if exceeded, triggers treatment, or other requirements, which a water system must follow.						
<i>Treatment Technique (TT)</i> - A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.						
<i>Maximum Contaminant Level</i> - 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.						
<i>Maximum Contaminant Level Goal</i> 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.						
<i>Maximum Residual Disinfectant Level (MRDL)</i> : 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.						
<i>Maximum Residual Disinfectant Level Goal (MRDLG)</i> : The level of a drinking water disinfectant below which there is no known or expected risk to health.						
<i>Running Annual Average (RAA)</i> : The RAA is calculated each quarter by taking the average of the four most recent samples collected.						
N/A-Not applicable						

CITY OF TROY TABLE OF DETECTED CONTAMINANTS Public Water Supply Identification Number NY4100050						
Contaminant	Violation Y/N	Level Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
Microbiological Contaminants						
Turbidity (Highest turbidity sample from Troy WTP on 8/26/11)	N	0.44 ¹ 100%	NTU	N/A	TT=1.0 NTU TT= 95% samples < 0.3	Soil runoff
Inorganic Contaminants						
Barium (sample from 6/20/11)	N	29	ppb	2000	2000	Erosion of natural deposits
Chloride	N	19	ppm	N/A	250	Geology; Naturally occurring
Color (average of daily samples) range	N	3 0-7	units	N/A	15	Large quantities of organic chemicals, the presence of metals such as copper, iron and manganese; Natural color may be caused by decaying leaves, plants, and soil organic matter.
Fluoride(average of daily samples) Range	N	880 270-1060	ppb	N/A	2200	Water additive which promotes strong teeth
Iron (average of weekday samples) range	N	30 ND-140	ppb	N/A	300	Geology; Naturally occurring
Manganese(average of weekday samples) range	N	10 ND-70	ppb	N/A	300	Geology; Naturally occurring
Nitrate (sample from 6/28/11)	N	0.222	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
pH (average of daily samples) range	N	8.78 6.79-9.25	units		6.5-8.5	
Sodium (sample from 6/20/11)	N	11.0	ppm	N/A	N/A	Geology; Road Salt
Sulfate (sample from 6/28/11)	N	16.0	ppm	N/A	250	Geology
Disinfection Byproducts						
Chlorine Dioxide Residual (average daily testing) range	N	ND ND-0.10	ppm	0.8	0.8	Used in the treatment and disinfection of drinking water
Chlorite (average based on daily testing) range	N	0.34 0.14-0.57	ppm	0.08	1.0	Byproduct of chlorine dioxide used in disinfection
Chlorine	N	0.84 0.07-1.23	ppm	MRDLG N/A	MRDL 4	Used in the treatment and disinfection of drinking water
Radioactive Contaminants						
Combined Radium (226 & 228 from 2009)	N	0.59	pCi/L	0	5	Erosion of natural deposits
Gross Alpha Particles (sample from 2009)	N	0.38	pCi/L	0	15	Erosion of natural deposits

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.

2. Water containing more than 20 mg/l should not be consumed by persons on severely restricted sodium diets.

As illustrated in the table above, Troy's monitoring and testing detected some contaminants; all other contaminants were below the maximum levels permitted by the State, known as the maximum contaminant levels (MCL). Many of the test results were **NON DETECTABLE**. The type/group (number of contaminants in each group) tested for were as follows: volatile organic compounds (52) +MTBE, synthetic organic compounds (38), asbestos, color. The inorganic contaminants tested for and non detectable were, arsenic, cadmium, chromium, mercury, silver, zinc, selenium, antimony, beryllium, thallium, nickel and cyanide.