

Annual Water Quality Report for 2016

Town of Rotterdam

John F. Kirvin Government Center

1100 Sunrise Blvd. Rotterdam, NY 12306

Water District #3 &4 (Public Water Supply Identification Number NY4600067)

Water District #5 (Public Water Supply Identification Number NY4600069)

INTRODUCTION

To comply with State regulations, the Town of Rotterdam, 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. Ian Bonthron, Sr. Water Operator, 49 Rice Road, Schenectady, NY 12306; Telephone (518) 393-1131, respectively.* 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 Town Board meetings. They are held on the 2nd and 4th Wednesday of each month, 7:00 PM at the *John F. Kirvin Government Center, 1100 Sunrise Blvd; Telephone (518) 355-7575.*

WHERE DOES OUR WATER COME FROM?

The Town of Rotterdam draws its water from "groundwater" sources. Groundwater or well water is stored below the surface of the earth in deep, porous rocks called "aquifers." Groundwater is purified naturally as it filters through layers of soil, clay, rock and sand. This process, known as "percolation" takes years to complete. As a result, groundwater requires less treatment than surface water. Both Water District #3 serving Rotterdam Junction and Water District #5 serving Rotterdam, obtain water from the Great Flats Aquifer located adjacent to the Mohawk River. This aquifer is excellent in both quality and quantity, as a groundwater source serving the Town of Rotterdam, as well as the City of Schenectady. A regional watershed board has rules and regulations in place to protect this source of water supply. The two water districts in Rotterdam operate independently with their own wells, pumps, storage tanks and distribution piping systems.

Treatment of the raw water produced by the wells consists of gas chlorination, which is used for disinfection to protect against contamination from harmful bacteria and other organisms. We also add sodium hexametaphosphate for iron and manganese sequestration and corrosion control. The Town of Rotterdam does not add fluoride to the water. Water softening equipment may be utilized at individual connections at the user's discretion but be aware that softening increases the amount of sodium in your water. You should have a by-pass valve for drinking and cooking with softened water. In general, our water is not considered excessively "hard" as compared to other sources.

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 District #3 is served by two drilled wells located off Route 5S in Rotterdam Junction. The permitted pumping capacity is 1,000,000 gallons per day (gpd). Pumping capacity is approximately 1000 gallons per minute. We have a 500,000-gallon storage tank to meet consumer demand and provide adequate fire protection. We provide water through 400 service connections to a population of approximately 1,900 people. Our average daily demand is 211,493 gallons. Our single highest day was 355,000 gallons. The total water produced in 2016 was 77,195,000 gallons. Since residential customers are not metered, the amount of water consumed by various customers utilized for fire protection, or lost from the system due to flushing or leaks is not known. Based on the daily amounts recorded, it is reasonable to say that at least 75% of the water supplied was consumed by households. Fire protection and flushing programs would account for the majority of the remaining 25% of water supplied.

The annual water consumption charge for residences, unmetered is \$25.00 per household. Commercial customers are metered. The First 75,000 gallons is \$50.00. For water use above 75,000 gallons, the rate is \$35.00 per 100,000 gallons usage. For unmetered commercial customers, the charge is \$35.00.

Water District #5 is served by four drilled wells located off Rice Road. The permitted pumping capacity is 10,000,000 gpd; the maximum peak day averages 9,100,000-gallons. Pumping capacity is capable of providing up to 7,000 gallons per minute with elevated storage tanks and standpipe combine to provide 5.2 million gallons of storage capacity. Transmission mains are 24" in diameter. We provide water through 11,000 service connections to a population of approximately 26,000 people. In 2016 Water District #5 provided 1,485,462,000 gallons of water. Our average daily demand was 4,063,997 gallons. Our single highest day was 8,920,000 gallons. With over 90% of the accounts being residential and unmetered, the amount consumed can only be estimated. In addition to water usage for fire protection, flushing and leaks in the system, there were also a number of water main breaks throughout the year. There are a small number of customers in the City of Schenectady, Town of Guilderland and Town of Princetown who also receive water from Rotterdam. There are also a small number of customers in Rotterdam who receive water from the City of Schenectady under agreements with the two public entities. Water District #5 has an emergency interconnect with the City of Schenectady.

The annual water consumption charge for residences, unmetered is \$75.00 per household. Commercial customers, are metered. The First 75,000gallons is \$75.00. For water use above 75,000 gallons, the rate is \$50.00 per 75,000 gallons usage. For unmetered commercial customers, the charge is \$75.00 per unit. In addition, each water district established a rate for debt service and operation and maintenance each year. This amount is assessed on the property tax bill and is based on the property's assessment amount.

ARE THERE CONTAMINANTS IN OUR DRINKING WATER?

In accordance with State regulations, the Town of Rotterdam 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 test 30 samples for coliform bacteria in Water District #5 and 3 samples in Water District #3 monthly. The tables 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.

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 Schenectady County Public Health Services at (518) 386-2818.

WHAT DOES THIS INFORMATION MEAN?

The attached tables presented depict which compounds were detected in your drinking water. As you can see by the 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. Although nitrate was detected below the MCL for Water District #3, it was detected at times at concentrations greater than 5 ppm which is greater than one-half of the MCL. Therefore, we are required to present the following information on nitrate in drinking water:

Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask for advice from your health care provider.

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.

As the State regulations require we routinely test your drinking water for numerous contaminants. These groups of contaminants followed by the number of contaminants in each group exist at levels that were **NOT DETECTABLE (Water District #5)** in your drinking water volatile organic compounds (52) + MTBE, synthetic organic compounds (38), asbestos, color, odor, radiological chemicals (3) Inorganic contaminants that were **NOT DETECTABLE** are: arsenic, cadmium, chromium, manganese, mercury, selenium, silver, fluoride, antimony, beryllium, thallium and cyanide; radiological chemicals (2) Microbiological Contaminants (1) *E. coli*.

Unregulated Contaminant Monitoring 3 was conducted during 2013. This is a requirement of the 1996 Safe Drinking Water Act amendments. This monitoring provides a basis for future regulatory action to protect the public health. The number in parentheses refers to the number of analytes measured for a total of 21 analytes. The breakdown of analytes is as follows: volatile organic chemicals (7), synthetic organic compounds (1), metals (6), oxyhalide anion (1), and perfluorinated compounds (6). We have listed those compounds that were detected in the table for WD#5. There are no associated MCL's for these compounds at this time.

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 about drinking water 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 Town of Rotterdam 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>

IS OUR WATER SYSTEM MEETING OTHER RULES THAT GOVERN OPERATIONS?

During 2016, Water District 5 and Water Districts 3 & 4 were in compliance with applicable State drinking water operating, monitoring and reporting requirements.

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 is attached to this report.

WATER CONSERVATION TIPS

The Town of Rotterdam 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 in the early morning or in the 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*
- ◆ *Do not throw or wash materials down Stormwater Catch Basins. This eventually flows to our streams.*

CAPITAL IMPROVEMENTS

The following improvements were made to the system in 2016:

- ◆ Drilled a new well that will allow for higher pump rates and greater water yield. This will boost our total daily water production
- ◆ Investigating the construction of a new water storage tank in the western end of the Town
- ◆ Installed a new radio system for SCADA system

- ◆ Installed new chlorination system at the well field

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. During 2016, no significant changes were made to the water system. However, new mains, hydrants and valves are planned for the future. 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. Please call (518) 393-1131 if you have questions.

ROTTERDAM WATER DISTRICT #3 & #4 TABLE OF DETECTED CONTAMINANTS Public Water Supply Identification Number NY4600067						
Contaminant	Violation Y/N	Level Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
Inorganic Contaminants (sample data from 1/12/16 unless otherwise noted)						
Barium	N	46	ppb	2000	2000	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Chloride	N	127	ppm	N/A	250	Geology; Naturally occurring
Chromium	N	1.6	ppb	100	100	Discharge from steel and pulp mills; Erosion of natural deposits.
Copper (data from 6/10/15-7/10/15)	N	240 ¹	ppb	13003	AL=1300	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Range of copper concentrations		50-260				
Iron	N	16	ppb	N/A	300	Geology; Naturally occurring
Lead (data from 6/10/15-7/10/15)	N	3 ²	ppb	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
Range of lead concentrations		ND-14				
Manganese	N	4.1	ppb	N/A	300	Geology; Naturally occurring
Nitrate (as Nitrogen) ³ Well#1 (average 4 samples Quarterly 1/12/16, 4/4/16, 8/8/16 & 10/11/16 (range of sample values)	N	5.78	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
Nitrate (as Nitrogen) ³ Well #2 (average 4 samples Quarterly 1/12/16, 4/4/16, 8/8/16 & 10/11/16 (range of sample values)		6.31				
		4.6-7.1				
pH	N	7.50	units		6.5-8.5	
Sodium ⁴	N	75	ppm	N/A	N/A	Geology; Road Salt
Sulfate	N	23.5	ppm	N/A	250	Geology;
Disinfection Byproducts)						
Chlorine Residual (average) based on daily readings (range)	N	0.5 0.4-0.65	ppm	MRDLG N/A	MRDL 4	Used in the disinfection and treatment of drinking water
Haloacetic Acids (HAA5) (sample data from 8/9/16)	N	3.9	ppb	N/A	60	By-product of drinking water chlorination
TTHM[Total Trihalomethanes] (sample from 8/9/16)	N	21.6	ppb	0	80	By-product of drinking water chlorination
Radiological Contaminants (samples from 6/4/13)						
Gross Beta Particle Activity (average of 2 samples) Range of values for 2 samples	N	2.8 ND-3.0	pCi/L	0	50	Decay of natural and man-made deposits

NOTES-

- The level presented represents the 90th percentile of 10 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, 10 samples were collected at your water system and the 90th percentile value was the 9th sample with the second highest value (level detected 0.27 mg/l). The action level for copper was not exceeded at any of the sites tested.
- The level presented represents the 90th percentile of 10 test sites. The action level for lead was not exceeded at any of the 10 sites tested
- Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant you should ask advice from your health care provider. As you can see our values have been below the MCL.
- Water containing more than 20 mg/l should not be consumed by persons on severely restricted sodium diets.
- The MCL for beta particles is 4 mrems/year. The State considers 50 pCi/L to be the level of concern for beta particles

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.

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.

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

N/A-Not applicable

ROTTERDAM WATER DISTRICT #5 TABLE OF DETECTED CONTAMINANTS						
Public Water Supply Identification Number NY4600069						
Contaminant	Violation Y/N	Level Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
Inorganic Contaminants (sample data from 1/22/16 unless otherwise noted)						
Barium	N	32	ppb	2000	2000	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Chloride	N	34.5	ppm	N/A	250	Geology; Naturally occurring
Copper (data from 6/6/14-7/16/14)	N	0.57 ¹	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Range of copper concentrations		ND-0.67				
Iron	N	99	ppb	N/A	300	Geology; Naturally occurring
Lead (data from 6/6/14-7/16/14)	N	4 ²	ppb	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
Range of lead concentrations		ND-8				
Nitrate (as Nitrogen)	N	0.367	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
pH	N	7.77	units		6.5-8.5	
Sodium ³	N	21	ppm	N/A	N/A	Geology; Road Salt
Sulfate	N	20.3	ppm	N/A	250	Geology
Disinfection Byproducts (sample data from 8/11/15)						
Chlorine Residual (average) based on daily testing (range)	N	0.80 0.60-0.92	ppm	MRDLG N/A	MRDL 4	Used in the disinfection and treatment of drinking water
Stage 2 Haloacetic Acids [HAA5]	N	4.67	ppb	N/A	60	By-product of drinking water chlorination
Stage 2 TTHM[Total Trihalomethanes]	N	14.1	ppb	0	80	By-product of drinking water chlorination
Microbiological Contaminants (sample from 7/18/16)						
Total Coliform	N	1 positive sample	N/A	0	any positive sample	Naturally present in the environment
Principal Organic Compounds/Volatile Organic Compounds						
Trichloroethene Well#1	N	0.6	ppb	0	5	Discharge from metal degreasing sites and other factories.
Unregulated Contaminant Monitoring Rule 3 Detected Contaminants (samples from 8/8/16)						

Strontium range of values	N	272-275	ppb	N/A	N/A
Chromium	N	ND-0.3	ppb	N/A	N/A
Chromium -6 (Hexavalent)	N	0.05-0.12	ppb	1	N/A

NOTES-

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2. The level presented represents the 90th percentile of 30 test sites. The action level for lead was not exceeded at any of the 30 sites tested.
3. Water containing more than 20 mg/l should not be consumed by persons on severely restricted sodium diets.

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.

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

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**Rotterdam Water District # 3
NY4600067
Source Water Assessment Summary**

The NYS DOH 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 move through the subsurface to the wells. 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. The section of the report entitled, "Are there contaminants in our drinking water?" provides a list of the contaminants that have been detected.

As mentioned earlier in this report, our drinking water is derived from 2 drilled wells. The source water assessment has rated these wells as having an elevated susceptibility. In addition, the wells draw from an unconfined aquifer and the overlying soils are not known to provide adequate protection from potential 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.

While the source water assessment rates our well(s) as being susceptible to microbials, 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.

The Rotterdam Water District #3 recognizes the importance of watershed protection by implementing Watershed Rules and Regulations along with zoning restrictions.

NY4600069
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