

Kitchawan Water District
Year 2012 Annual Drinking Water Quality Report
1080 Spillway Road, Shrub Oak, NY 10588 PWS#5903831

INTRODUCTION

To comply with State regulations, the Kitchawan Water District is issuing an annual 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 tap water quality met all State and Federal drinking water health standards. This report provides an overview of last year's water quality. Included are details about where your water comes from, what it contains, and how it compares to State standards.

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 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 the 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.

The Kitchawan Water District purchases all of its water from the New Castle Water System, which in turn, depends upon the New York City Aqueduct and Reservoir Systems for its entire raw water supply. New Castle's primary source is the Catskill Aqueduct System fed by the Ashokan Reservoir, and its secondary source is the New Croton Aqueduct fed by the Croton Reservoir System. The New Castle water System prefers the Catskill Supply for two reasons: the water quality is better and it is less costly to get it to the Millwood Water Treatment Plant. During 2012 there were no restrictions on use of the Catskill reservoir source.

The NYS DOH has evaluated the susceptibility of water supplies statewide to potential contamination under the Source Water Assessment Program (SWAP), and their findings are summarized in the paragraph(s) 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 our water system. The Millwood Water Treatment Plant provides regular monitoring of the water as it leaves the treatment plant to ensure that the water delivered to the Kitchawan water District meets all applicable standards.

We obtain water from the New York City water supply system. Water can either come from the Catskill watershed west of the Hudson River and/or from the Croton watershed in Putnam and Westchester Counties. The New York City Department of Environmental Protection (DEP) implements a series of programs to evaluate and protect source water quality within these watersheds. Their efforts focus on three important program areas: the enforcement of strengthened Watershed Rules and Regulations; the acquisition and protection of watershed lands; and implementation partnership programs that target specific sources of pollution in the watersheds. Due to these intensive efforts, the SWAP methodologies applied to the rest of the state were not applied for our water system.

The main water quality concerns associated with land cover in these watersheds are agriculture and residential land uses, which can contribute microbial contaminants, pesticides, and algae producing nutrients. There are also some concerns associated with wastewater, but advanced treatments, which reduce contaminants, are in place for most of these discharges. Additionally, the presence of other discrete facilities, such as landfills, chemical bulk storages, etc., could lead to some local impacts on water quality, but significant problems associated with these facilities are unlikely due to the size of the watershed and surveillance and management practices. In addition, the shallow nature of the Croton reservoirs, along with excess algae nutrients and the presence of wetlands in the watershed, contribute to periods of elevated water color and disinfection by-product precursor levels. Additional information on the water quality and protection efforts in these New York City watersheds can be found at NYC DEP's web site www.nyc.gov/dep/watershed.

The Millwood Water Treatment Plant is supervised by a Grade 1-A New York State Certified Water Treatment Plant operator and staffed 24 hours per day, seven days per week, with New York State certified Grade 2-A Water Treatment Plant Operators. The Millwood Water Treatment Plant operating criteria adds the least amount of treatment chemicals necessary to be effective and then removes all of the chemicals during the treatment process. The treatment regime has five steps: First, the raw water is mixed for one minute to disperse coagulation chemicals such as polyaluminum chloride, polymer and potassium permanganate. Second, the flocculators provide 30 minutes of staged, controlled mixing to entrap impurities such as clay, viruses, bacteria, protozoan cysts, minerals and algae into floc particles. Third, the Dissolved Air Flotation (DAF) process releases compressed air as microscopic bubbles into the bottom of the process stream and floats the impurity laden floc particles to the surface of the tanks where they are skimmed off. Clarified water leaves the bottom of the tank and flows into the Ozone Contact Chambers. Fourth, ozone is injected into the water. Ozone is the strongest, commonly used oxidizing agent for disinfection and is the primary disinfectant at the plant. It is generated onsite and by injecting it into the clarified water, before filtration, the amount of ozone used is minimized while any oxidized material can be removed by the filters. Finally, clarified, ozonated water is filtered through three feet of sand and anthracite filter media into an underdrain collection system to remove any floc particles that may have escaped the DAF clarification. Typically, the Plant physically removes 99.9% of the particulate matter and anything left in the water has been disinfected by the ozonation process. Chlorine and fluoride are also added before the water is pumped to the distribution system.

FACTS AND FIGURES

The Kitchawan water distribution system consists of approximately 7750 feet of eight inch underground water mains on Pinesbridge, Chadeayne, Syska and Barnes Roads and ten fire hydrants. The Kitchawan Water District provided water to approximately 37 homes in 2012. The total water purchased from the Town of New Castle in 2012 was 2,033,063 gallons. The amount of water delivered to customers in 2012 was 2,052,000 gallons. The average amount of water delivered to customers per day was 5,712 gallons. Water was used to flush the water mains for regular maintenance and to flush the mains during the course of the year to prevent stagnation and to maintain the water quality since only a little more than half of the homes located within the water district were connected to the mains in 2012.

During each four-month billing period customers were billed \$59.20 for the first 5,000 gallons of water and \$11.84 for each additional 1000 gallons. The rate of penalty charge was 10% per billing period. The annual average water charge was approximately \$665 per household.

ARE THERE CONTAMINANTS IN OUR DRINKING WATER?

As the State regulations require, we routinely test our drinking water for numerous contaminants. These contaminants include total coliform, turbidity, lead and copper, other inorganic compounds and organic compounds. Results for water tests for contaminants that were found in 2012 are summarized in the attached table, Table of Detected Contaminants, found at the end of this report. Our water is tested for most of these contaminants annually or more frequently. However, State regulations allow us to monitor for certain contaminants less than once per year because their concentrations are not expected to vary significantly from year to year.

Contaminants that were tested for and not detected in the source water include Copper, 3-Hydroxycarbofuran, Aldicarb, Aldicarb sulfone, Aldicarb sulfoxide, Carbaryl, Carbofuran, Methomyl, Oxamyl, Aldrin, Chlordane, Dieldrin, Endrin, Heptachlor, Heptachlor Epoxide, Lindane, Methoxychlor, PCB's, Propachlor, Toxaphene, 2,3,7,8-TCDD (Dioxin), Diquat, Endothall, Glyphosate, 2,4,5-T, 2,4-D, Dalapon, Dicamba, Dinoseb, Pentachlorophenol, Picloram, Silvex, 1,2-Dibromo-3-chloropropane, 1,2-Dibromoethane, Butachlor, Metolachlor, Metribuzin, Alachlor, Atrazine, Benzo(a)pyrene, bis(2-Ethylhexyl) adipate, bis(2-Ethylhexyl) phthalate, Hexachlorobenzene, Hexachlorocyclopentadiene, Simazine, 1,1,1,2-tetrachloroethane, 1,1,1-trichloroethane, 1,1,2,2-tetrachloroethane, 1,1,2-trichloroethane, 1,1-dichloroethane, 1,1-dichloroethene, 1,1-dichloropropene, 1,2,3-trichlorobenzene, 1,2,3-trichloropropane, 1,2,4-trichlorobenzene, 1,2,4-trimethylbenzene, 1,2-dichlorobenzene, 1,2-dichloroethane, 1,2-dichloropropane, 1,3,5-trimethylbenzene, 1,3-dichlorobenzene, 1,3-dichloropropane, 1,4-dichlorobenzene, 2,2-dichloropropane, 2-butanone, 2-chlorotoluene, 4-chlorotoluene, Benzene, Bromobenzene, Bromochloromethane, Bromomethane, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloromethane, cis-1,2-dichloroethene, cis-1,3-dichloropropene, Dibromomethane, Dichlorodifluoromethane, Ethylbenzene, Hexachlorobutadiene, Isopropylbenzene, Methyl iso-butyl ketone, Methyl tert-butyl ether (MTBE), Methylene Chloride, N-butylbenzene, N-propylbenzene, Naphthalene, O-xylene, P & M-xylene, P-isopropyltoluene, SEC-butylbenzene, Styrene, TERT-butylbenzene, Tetrachloroethene, Toluene, trans-1,2-dichloroethene, trans-1,3-dichloropropene, Trichloroethene, Trichlorofluoromethane, Vinyl chloride, Perchlorate, DCPA di-acid, 2,4-dinitrotoluene, 2,6-dinitrotoluene, 4,4-DDE, Acetochlor, EPTC, Molinate, Terbacil, MTBE, nitrobenzene, Strontium 90, and Tritium).

It should be noted that all drinking water, including bottled drinking water, might be reasonably expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (800) 426-4791 and www.epa.gov/safewater or the Westchester County Department of Health at (914) 813-5000 and www.westchester.gov/health.

WHAT DOES THIS INFORMATION MEAN?

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not your drinking water meets health standards. As you can see from the attached table, our water quality met or exceeded governing regulations in 2012. Although a few contaminants have been detected, these contaminants were detected below the level allowed by the State.

DO I NEED TO TAKE SPECIAL PRECAUTIONS?

Although our drinking water met or exceeded state and federal regulations, some people may be more vulnerable to disease causing microorganisms or pathogens in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice from their health care provider about their drinking water. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium*, *Giardia* and other microbial pathogens are available from the Safe Drinking Water Hotline (800-426-4791).

If present, elevated levels of lead can cause serious health problems, especially for pregnant women, infants, and young children. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. The Kitchawan Water District is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead

exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline (1-800-426-4791) or at <http://www.epa.gov/safewater/lead>.

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 New Castle Water System 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 0.7 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 New Castle Water System monitor fluoride levels on a daily basis. During 2012 monitoring in the distribution system showed fluoride levels ranging between 0.62 and 1.00 mg/L. None of the monitoring results showed fluoride at levels that approach the 2.2 mg/l MCL for fluoride.

WHY SAVE WATER AND HOW TO AVOID WASTING IT?

Although our system has an adequate amount of water to meet present and future demands, there are a number of reasons why it is important to conserve water: It saves energy and some of the costs associated with both of these necessities of life; Also, it lessens the strain on the water system during a dry spell or drought, helping to avoid severe water use restrictions so that essential fire fighting needs are met.

You can play a role in conserving water by becoming conscious of the amount of water your household is using, and by looking for ways to use less whenever you can. It is not hard to conserve water. Conservation tips include:

- ♦ Automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded. So, get a run for your money and load it to capacity.
- ♦ Turn off the tap when brushing your teeth.
- ♦ Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it up 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.
- ♦ Place mulch around trees and plants to lessen evaporation.

In closing we ask that all our customers help us protect our water sources, which are the heart of our community and our way of life. If you have questions concerning your drinking water, please don't hesitate to call us at (914) 245-6111.

Thank you for allowing us to provide your family with quality drinking water.

KITCHAWAN WATER DISTRICT

2012 WATER ANALYSIS

TABLE OF DETECTED CONTAMINANTS

Contaminants (units)	Violation Yes or No	Date of Sample	MCL	Level Detected	MCLG	Likely Source of Contaminant
Turbidity (at treatment plant)	No	Every 4 hours	0.3 NTU	0.031 NTU	n/a	Soil runoff, Turbidity is a measurement of the cloudiness of the water.
Turbidity (in distribution system)	No	1/1 - 12/31/12	5.0 NTU	0.27 NTU .06 - 0.51	n/a	Soil runoff, Turbidity is a measurement of the cloudiness of the water.
Inorganic Contaminants						
Fluoride (ppm)	No	Every 4 hours	2.2	0.73 ppm	n/a	Erosion of natural deposits. Water additive which promotes good teeth.
Nitrate (ppm)	No	10/24/2012	10	0.181 ppm	10	Runoff from fertilizer use; Leaching from septic tanks; Erosion of natural deposits
Barium	No	10/24/2012	2 mg/L	.0083 mg/L	2	Discharge from drilling or metal refineries; Erosion or natural deposits
Chloride	No	10/24/2012	250 mg/L	8.67 mg/L	n/a	Erosion of natural deposits; Road salt
Sulfate	No	10/24/2012	250 mg/l	4.17 mg/L	n/a	Erosion of natural deposits.
Sodium	No	10/24/2012	See health effects 1.	7.64 mg/L	n/a	Naturally occurring, road salt, water softeners.
Disinfection Byproducts						
TTHMs [Total - Trihalomethanes] (ppb)	No	8/13/2012	80 ug/L	28.6 ug/L	n/a	By-product of drinking water disinfection, needed to kill harmful organisms. ²
Haloacetic acids	No	8/13/2012	60 ug/L	8.4 ug/L	n/a	By-product of drinking water disinfection, needed to kill harmful organisms.
Chlorine Residual (entry Point at New Castle)	No	Every 4 hours	4 mg/L	1.08 mg/L	n/a	Water additive to control microbes.
Chlorine Residual (distribution system)	No	1/1 - 12/31/12	4 mg/L	0.27 mg/L .03 - 1.03	n/a	Water additive to control microbes.
Zinc (ug/L)	No	10/24/2012	5000 ug/L	2.0 ug/L	n/a	Erosion of natural deposits.
Gross Alpha (pCi/L)	No	6/7/2004	15	0.1 pCi/L	0	Decay of natural deposits, or man-made emissions.
Gross Beta (pCi/L)	No	6/7/2004	50	0.5 pCi/L	0	Decay of natural deposits, or man-made emissions.
Miscellaneous Contaminants						
Hardness (mg/L)	No	10/24/2012	n/a	18.0 mg/l	n/a	A combination of mineral constituents such as calcium and magnesium salts. 0-45 = soft water, 46-90 = soft to moderately hard, 91-130 = moderately hard to hard.
Alkalinity (mg/L)	No	10/24/2012	n/a	16.7 mg/L	n/a	A measure of the alkaline constituents of water, mostly bicarbonates.
Calcium	No	10/24/2012	n/a	5.71 mg/l	n/a	A measure of the alkaline constituents of water.
pH (units)	No	10/24/2012	n/a	6.83 units	n/a	A measure of the intensity of the basic or acidic condition of a liquid. Neutral water is a pH of 7.
Total Dissolved Solids	No	10/24/2012	n/a	67.2 mg/L	n/a	A measure of dissolved solids in water.
Copper	No	8/4-9/30/11	1.3	0.028 0.004 - 0.051	AL 1.3 mg/L	Corrosion of household plumbing systems; Erosion of natural deposits.
Lead	No	8/4-9/30/11	0	6 ND -82	AL 15.0 ug/L	Corrosion of household plumbing systems; Erosion of natural deposits.

1. Water containing more than 20 mg/L of sodium should not be used for drinking by people who are on severely restricted diets. Water containing more than 270 mg/L of sodium should not be used for drinking by people on moderately restricted sodium diets.

2. THM's are formed when source water contains large amounts of organic matter.

3. Levels presented represent the 90th percentile of 11 sites tested. A percentile is a value on a scale of 100 that indicates the percent of the distribution that is equal to or below it. The 90th percentile is equal to or greater than 90% of the lead or copper values detected in our water system. In this case, the 90th percentile value was 0.028 mg/L for copper and 6 ug/L for lead.

ND = not detected n/a = not applicable pCi/L = picocuries per liter (a measure of radioactivity) NTU = nephelometric turbidity units

PPM = parts per million mg/L = milligrams per liter ug/L = micrograms per liter AL = action level or concentration of a contaminant, which, if exceeded, triggers treatment or other requirements that a water system must follow.

PPB = parts per billion or micrograms per liter (ug/L) L/T = Less Than TT = treatment technique or a required process intended to reduce the level of a contaminant in drinking water.

MCL= The highest level of a contaminant that is allowed in drinking water, and are set as close to the MCLGs as feasible.

MCLG= The level of a contaminant in drinking water below which there is no known or expected risk to health.