This map of the City indicates the general areas where water can be supplied by the Croton and Groundwater Systems when they are on-line. It is possible to supply the entire City from the Catskill/Delaware System.

designed to protect the Kensico Reservoir. In addition, the City proposed new programs to target areas with concentrations of failing septics; to support proper operation and maintenance of septics in the watershed; to support water quality planning and undertake certain water quality studies; and to design and construct an enhanced disinfection facility for Catskill/Delaware water if such a facility is feasible. DEP's December 2001 report is available on the DEP website, www.nyc.gov/dep.

Upstate Capital Improvements

The City continued to implement a multi-year program to upgrade and improve its upstate water supply facilities, including gatehouses, aqueducts, water testing laboratories, and other facilities, which are important to ensuring a safe and reliable supply of drinking water. An ongoing dam reconstruction program has been in effect for the rehabilitation of dams. Work has been completed on five dams, and designs or engineering studies are underway for all remaining dams. In addition, work is expected to begin on five more reservoirs in 2002.

The Distribution System

City Water Tunnel No. 3

The Third Water Tunnel begun in 1970, is being built in stages. The first stage of Tunnel No. 3, which became operational in July 1998, has already helped to improve the reliability of the City's drinking water distribution system. Stage 2 of Tunnel No. 3 includes two sections. The tunnel component of the first section of Stage 2, which is in Brooklyn and Queens, was completed in May 2001. The supply shafts, which will feed water from this new tunnel to the distribution system, are currently under construction. Once completed, this first section of Stage 2 will improve service to Staten Island, Brooklyn and Queens when it begins delivering water in 2005. A Groundbreaking Ceremony for the second and last portion of Stage 2 of City Tunnel No. 3 was held in Manhattan in December 2001. The Manhattan section is expected to be completed in 2008.

When completed, Tunnel No. 3 will create a more flexible means of supplying drinking water to the entire City and will provide delivery alternatives in the event of disruption in any of the older tunnels. It will also permit New York City to drain, examine and rehabilitate City Tunnel Nos. 1 and 2.

Operations

In our ongoing efforts to maintain the appropriate volume and high quality of water in the distribution system, there is some rotation in the water sources used by DEP. In the Groundwater System, wells are routinely removed and returned to service for maintenance or due to changes in demand. The


Croton Dam

Croton System was operated in a limited capacity from January through September 2001 with the Mosholu Pumping Station activated, which pumped about 35 million gallons per day (MGD) of Croton water into Tunnel No. 1 of the Catskill/Delaware Supply. Beginning on October 9 and through the end of the year, the Croton System was placed back into full service and its water was fed directly into distribution, feeding areas of Manhattan and the Bronx.

Croton Filtration Plant

The City is planning to build a treatment facility to filter water from the Croton System. The federal Surface Water Treatment Rule (SWTR) requires that all water supplies be filtered by June 29, 1993, unless the system meets special criteria to receive a waiver. Even though Croton water quality is high, it experiences occasional color problems and will be subjected to stricter standards for disinfection by-products in the near future. In November 1998, a Consent Decree, committing the City to design, construct, and operate a Croton filtration facility was signed by the City, the United States and the State of New York. Although the Consent Decree called for the City to complete and commence operation of the filtration facility by 2007, the project timetable has been delayed as a result of litigation against the City involving the site initially chosen for this facility. In light of the delay, the parties to the Consent Decree have reached agreement on a Supplement to the Consent decree, which calls for the City to evaluate and choose between two new sites (one in the Bronx and one in Westchester County), and to complete and commence operation of the facility by 2010 (if at the Westchester site), or by 2011 (if at the Bronx site). The facility is expected to reduce color levels in the Croton water supply and ensure compliance with stricter drinking water standards to be imposed in the future.

Until DEP begins to filter Croton water, we are required to make the following statement: Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites, which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

New York City's Water Treatment

All surface water and groundwater entering New York City's distribution system is treated with chlorine, fluoride, orthophosphate, and, in some cases, sodium hydroxide. New York City uses chlorine to meet the New York State Sanitary Code and federal Safe Drinking Water Act disinfection requirements. Fluoride, at a concentration of one part per million, is added to help prevent tooth decay and has been added since 1964 in accordance with the New York City Health Code. Orthophosphate is added to create a protective film on pipes that reduces the release of metals such as lead from household plumbing. Sodium hydroxide is added to Catskill/Delaware water to raise the pH and reduce corrosivity.

A sequestering phosphate is applied at several wells to prevent the precipitation of naturally occurring minerals, mostly iron and manganese, in the distribution mains and customers' household piping. Air stripper facilities operate at several wells to remove volatile organic chemicals.

Frequently Asked Questions

Does my drinking water contain fluoride?

Yes, all New York City tap water contains fluoride. In accordance with Article 141.08 of the New York City Health Code, DEP, as the New York City water supplier, adds a fluoride compound that provides our water supply with a concentration of approximately 1.0 part per million (ppm) fluoride. Fluoridation commenced in 1964.

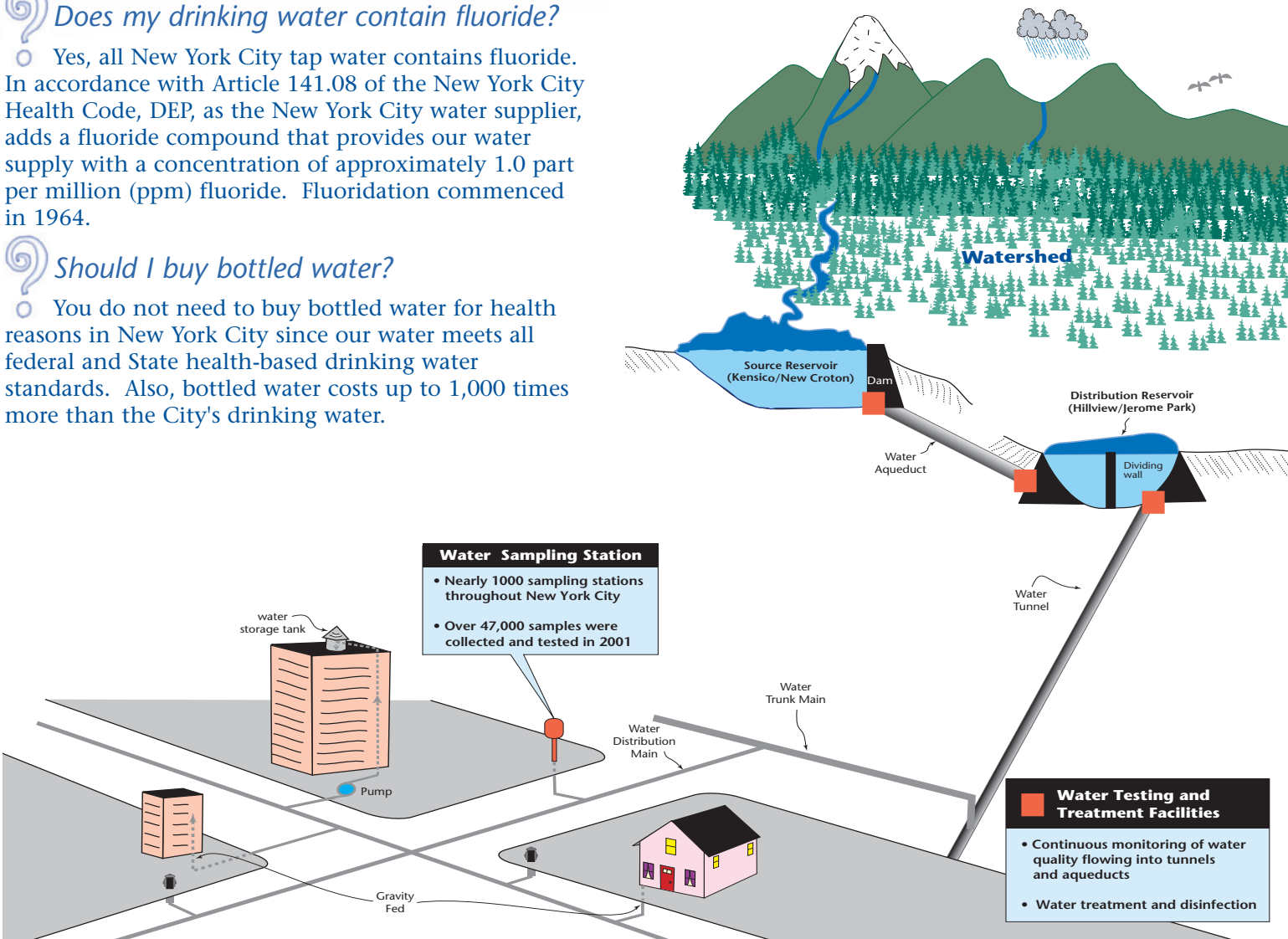
Should I buy bottled water?

You do not need to buy bottled water for health reasons in New York City since our water meets all federal and State health-based drinking water standards. Also, bottled water costs up to 1,000 times more than the City's drinking water.

At times I can detect chlorine odors in tap water. What can I do about it?

Chlorine odors may be more noticeable when the weather is warmer. Chlorine is a disinfectant and is added to the water to kill germs. The following are ways you can remove the chlorine and its odor from your drinking water:

- Fill a pitcher and let it stand in the refrigerator overnight. (This is the best way.)
- Fill a glass or jar with water and let it stand in sunlight for 30 minutes.
- Pour water from one container to another about 10 times.
- Heat the water to about 100 degrees Fahrenheit.
- Once you remove the chlorine, be sure to refrigerate the water to limit bacterial regrowth.



The aerators in my home are clogging with pieces of a small, whitish material. What is causing this to occur?

This problem may be accompanied by a significant drop in water pressure at the affected faucet in addition to a decrease in your hot water supply. The culprit is the hot water heater's "dip-tube." This is a long internal tube that delivers cold water to the bottom of the hot water heater tank. The tube, which is composed of polypropylene, may disintegrate. The problem affects approximately 16 million water heaters manufactured between 1993 and 1996.

At times, my drinking water looks "milky" when first taken from a faucet, but then clears up. Why?

Air becomes trapped in the water as it makes its long trip from the upstate reservoirs to the City. As a result, microbubbles of air can sometimes cause water to appear cloudy or milky. This condition is not a public health concern. The cloudiness is temporary and clears quickly after the water is drawn from the tap and the excess air is released.

Sometimes my water is a rusty brown color. What causes this?

Brown water is commonly associated with plumbing corrosion problems inside buildings and from rusting hot water heaters. If you have an ongoing problem with brown water, it is probably due to rusty pipes. It is recommended that you run your cold water for 2 - 3 minutes if it has not been used for an extended period of time. This will flush the line. You can avoid wasting water by catching your "flush" water in a container and using it to water plants or for other purposes. In addition, brown water can result from street construction or water main work being done in the area. Any disturbance to the main, including the opening of a fire hydrant, can cause pipe sediment to shift, resulting in brown water. The settling time of the main will vary, depending on the size of the water main.

Is New York City's water "hard"?

Hardness is a measure of dissolved calcium and magnesium in the water. The less calcium and magnesium in the water ("soft" water), the easier it is to create lather and suds. Depending upon location, the hardness can be 1.0 grain/gallon ($CaCO_3$) for the Catskill/Delaware System, and 5 grains/gallon for the Croton System. New York City's water is predominantly "soft."

DEFINITIONS

Action Level (AL):

The concentration of a contaminant, which if exceeded, triggers treatment or other requirements that a water system must follow. An exceedence occurs if more than 10% of the samples exceed the Action Level.

Maximum Contaminant Level Goal (MCLG):

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 Contaminant Level (MCL):

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 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.

Treatment Technique (TT):

A required process intended to reduce the level of a contaminant in drinking 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 the value. The 90th percentile is equal to or greater than 90% of the lead and copper values detected at your water system.

ABBREVIATIONS

CFU/ml = colony forming units per milliliter

mg/L = milligrams per liter (10^{-3} grams per liter)

NA = Not Applicable

ND = Lab analysis indicates parameter is not present

NDL = No Designated Limit

NTU = Nephelometric Turbidity Units

pCi/L = picocurie per liter (a measure of radioactivity)

µg/L = micrograms per liter (10^{-6} grams per liter)

µmho/cm = micromhos per centimeter

NEW YORK CITY
DRINKING WATER QUALITY TESTING RESULTS 2001

DETECTED REGULATED PARAMETERS

PARAMETERS	NYS DOH MCL	US EPA MCLG	CATSKILL/DELAWARE SYSTEM			CROTON SYSTEM			GROUNDWATER SYSTEM			SOURCES IN DRINKING WATER
			# SAMPLES	RANGE	AVERAGE	# SAMPLES	RANGE	AVERAGE	# SAMPLES	RANGE	AVERAGE	
REGULATED CONVENTIONAL PHYSICAL AND CHEMICAL PARAMETERS												
Barium (mg/L) [1]	2	2	462	ND - 0.03	0.02	109	ND - 0.06	0.03	65	ND - 0.09	0.02	Erosion of natural deposits
Chloride (mg/L)	250	NA	522	7 - 32	11	34	33 - 63	54	235	11 - 148	38	Naturally occurring; road salt
Chromium (µg/L)	100	100	404	ND	ND	109	ND	ND	65	ND - 3	< 2	Erosion of natural deposits
Color - entry points (color units)	15 [2]	NA	1103	3 - 15	7	89	10 - 26	15	377	1 - 44	5	Iron and manganese; or organic sources, such as algal growth
Copper (mg/L)	1.3 [3]	1.3	544	ND - 0.4	0.01	109	ND - 0.21	0.02	242	ND - 0.17	0.02	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Fluoride (mg/L)	2.2	NA	9392	0.1 - 1.3	1	148	1 - 1.3	1.1	646	0.3 - 1.5	1	Erosion of natural deposits; water additive which promotes strong teeth; runoff from fertilizer
Gross Beta Particle (pCi/L)	50 [4]	0	3	ND	ND	1	2.5	2.5	1	ND	ND	Decay of natural deposits and man-made emissions
Iron (µg/L)	300 [5]	NA	524	ND - 180	30	127	40 - 600	90	242	ND - 1500	290	Naturally occurring
Lead (µg/L)	15 [3]	0	544[6]	ND - 119	1	109	ND - 5	<1	242	ND - 9	<1	Corrosion of household plumbing systems; erosion of natural deposits
Manganese (µg/L)	300 [5]	NA	471	ND - 180	21	117	32 - 1212	90	237	ND - 286	51	Naturally occurring
Nitrate (mg/L nitrogen)	10	10	521	0.1 - 2.1	0.2	34	0.1 - 0.6	0.2	235	0.0 - 8.7	2.9	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nitrite (mg/L nitrogen)	1	1	197	ND - 0.005	0.001	12	0.001 - 0.003	0.002	93	ND - 0.004	0.001	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Selenium (µg/L)	50	50	398	ND	ND	109	ND	ND	65	ND - 3	<2	Erosion of natural deposits
Sodium (mg/L)	NDL [7]	NA	410	5 - 31	8	111	18 - 31	28	107	9 - 53	29	Naturally occurring; road salt; water softeners; animal waste
Sulfate (mg/L)	250	NA	521	7 - 20.5	7.7	34	9.4 - 12.6	11.5	235	7.3 - 87.4	33.7	Naturally occurring
Turbidity [8]- distribution system (NTU)	5 [9]	NA	9146	0.8 - 1.7	1.1	141	1.3 - 1.6	1.4	648	0.5 - 1.0	0.7	Soil runoff
Turbidity [8]- entry points (NTU)	1 [10]	NA	-	-	-	83		1	-	-	-	Soil runoff
Zinc (mg/L)	5	NA	470	ND - 0.127	0.006	109	ND - 0.006	0.002	237	ND - 0.622	0.072	Naturally occurring
REGULATED ORGANIC CONTAMINANTS												
Total Trihalomethanes (µg/L)	100 [11]	NA	506	9 - 56	34	154	28 - 74	53	148	ND - 40	25	By-product of drinking water chlorination
Principal Organic Contaminants detected:												
Bromomethane (µg/L)	5	NA	506	ND	ND	150	ND	ND	148	ND - 0.9	< 0.5	Used to kill a variety of pests; used to make other chemicals or as a solvent to get oil out of nuts, seeds, and wool.
Chloromethane (µg/L)	5	NA	506	ND - 0.5	ND*	154	ND	ND	148	ND	ND	Used as an exatractant for greases, oils, and resins; as a solvent in the rubber industry; as a refrigerant, blowing agent and propellant in polystyrene foam production; as an anesthetic; as an intermediate in drug manufacturing; as a food additive, a fumigant and a fire extinguisher.
Dichlorodifluoromethane (µg/L)	5	NA	501	ND	ND	154	ND	ND	149	ND - 0.9	< 0.5	Refrigerant; aerosol propellant; foaming agent
n-Propylbenzene (µg/L)	5	NA	506	ND	ND	154	ND - 0.6	ND*	149	ND	ND	Occurs naturally in petroleum and bituminous coal. It is also released into the atmosphere in emissions from combustible sources such as incinerate, gasoline engines and diesel engines. Solvent evaporation, landfill leaching and general use of asphalt also release this compound to the environment.
Tetrachloroethylene (µg/L)	5	NA	506	ND	ND	154	ND	ND	149	ND - 3.4	0.6	Discharge from dry cleaners
Toluene (µg/L)	5	NA	506	ND - 0.8	ND*	154	ND	ND	149	ND	ND	Discharge from petroleum factories
1,2,3-Trichlorobenzene (µg/L)	5	NA	506	ND	ND	154	ND	ND	149	ND - 0.6	ND*	Discharge from textile finishing factories
1,2,4-Trichlorobenzene (µg/L)	5	NA	506	ND - 0.6	ND*	154	ND	ND	149	ND - 0.6	ND*	Discharge from textile finishing factories
Trichloroethene (µg/L)	5	0	506	ND	ND	154	ND	ND	149	ND - 1.3	< 0.5	Residual of cleaning solvents and metal degreasers
m-Xylene (µg/L)	5	NA	506	ND - 1.1	ND*	154	ND	ND	149	ND	ND	Leaks from gasoline tanks; discharge from petroleum factories; leaching of solvent from lining of potable water tanks
p-Xylene (µg/L)	5	NA	506	ND - 1.1	ND*	154	ND	ND	149	ND	ND	Leaks from gasoline tanks; discharge from petroleum factories; leaching of solvent from lining of potable water tanks
Specified Organic Contaminants detected:												
Hexachlorocyclopentadiene (µg/L)	5	NA	10	ND	ND	3	ND - 0.08	ND*	2	ND	ND	Discharge from chemical factories
Simazine (µg/L)	4	4	10	ND	ND	3	ND - 0.05	ND*	2	ND	ND	Herbicide runoff
MICROBIAL PARAMETERS												
Total Coliform Bacteria (% of samples positive/month)	5%	0	10242	ND - 0.7%	0.2%	224	ND	0.0%	648	ND - 1.6%	0.3%	Naturally present in the environment
E. coli (CFU/100mL)	[12]	0	10242	ND	ND	224	ND	ND	648	ND	ND	Human and animal fecal wastee
Heterotrophic Plate Count (CFU/mL)	TT	-	7459	ND - 629	1	153	ND - 124	1	502	ND - 14	ND	Naturally present in the environment

LEAD AND COPPER RULE SAMPLING AT RESIDENTIAL WATER TAPS: January - June 2001

PARAMETERS	NYS DOH AL	US EPA MCLG	# SAMPLES	RANGE	90th PERCENTILE VALUES	# SAMPLES EXCEEDING AL	SOURCES IN DRINKING WATER
Copper (mg/L)	1.3	1.3	107	0.005 - 0.397	0.278	0	Corrosion of household plumbing systems
Lead (µg/L)	15	0	107	ND - 3555	15	10	Corrosion of household plumbing systems