Rudolph W. Giuliani, Mayor

Joel A. Miele Sr., P.E., Commisioner

New York City 1997 Water Supply Statement

In accordance with Chapter 752 of the New York State Public Health Law, as amended in 1996, all large drinking water suppliers in the State are required to provide the public with an annual statement describing the water supply and the quality of its water. The New York City Department of Environmental Protection is pleased to present its 1997 Annual Water Supply Statement.

The New York City surface (reservoir) water supply system provides approximately 1.3 billion gallons of safe drinking water daily for nearly 8 million residents of New York City, as well as visitors, commuters and approximately one million people living in Westchester, Putnam, Ulster, and Orange counties. In addition to our surface water supplies, approximately 520,000 people in southeastern Queens receive groundwater or a blend of groundwater and surface water. In all, the City system supplies high quality water to nearly half the population of New York State.

Where Does New York City's Water Come From?

Most of New York City's water is supplied from a network of 19 reservoirs and three controlled lakes in a 1,969 square-mile watershed that extends 125 miles north of New York City. The Croton system, the City's original upstate supply, provides about 10% of our daily water from 12 reservoir basins in Putnam, Westchester, and Dutchess counties. Approximately 90% of our water comes from the Catskill/Delaware watershed, located in Delaware, Greene, Schoharie, Sullivan, and Ulster counties, west of the Hudson River. New York City's groundwater system in southeastern Queens operated 26 wells to supply an average of 22 million gallons of drinking water per day, or about two percent of the City's total need.

Water Quality

The New York City Department of Environmental Protection (DEP) operates the water supply system that delivers water to City residents. An extensive monitoring program—far more extensive than required by law — demonstrates that the quality of New York City's drinking water remains high, meeting all State and Federal drinking water standards except for color (a seasonal, aesthetic condition in the Croton and groundwater systems.)

DEP monitors the water in the distribution system, the upstate reservoirs and feeder streams, and the wells that are the sources for our supply. Water quality is monitored continuously as the water enters the distribution system, and is tested at sampling points throughout the entire City. Water is analyzed for a broad spectrum of microbiological, chemical, and physical measures of quality. In 1997, DEP collected more than 36,000 in-City samples and performed approximately 340,000 analyses.

TEST RESULTS

The results of the tests for parameters conducted on distribution water samples under DEP's Distribution System Monitoring Program in 1997 are summarized in the attached tables. Data is presented separately for the Croton, Catskill/Delaware, and groundwater systems. Detailed results can be obtained from DEP. Whether a particular location receives Croton, Catskill/Delaware, groundwater, or a mixture, varies depending on system operations and consumer demand.

CRYPTOSPORIDIUM AND GIARDIA

While there is no evidence of illness related to the New York City water supply, New York State law requires all water suppliers to notify their customers about the potential risks of Cryptosporidium and Giardia. Cryptosporidiosis and giardiasis are intestinal illnesses caused by microscopic pathogens which can be waterborne. Cryptosporidiosis can be very serious for people with weak immune systems, such as chemotherapy, dialysis, or transplant patients, and people with Crohn's disease or HIV infection. People with weakened immune systems should discuss with their health care providers the need to take extra precautions such as boiling water, using a certified bottled water, or a specially approved home filter. Individuals who think they may have cryptosporidiosis or giardiasis should contact their health care provider immediately.

According to the United States Environmental Protection Agency and the Centers for Disease Control and Prevention, it is unclear how most cases of cryptosporidiosis in the United States are transmitted. The relative importance of various risk factors are unknown. Such factors include eating contaminated food, swallowing contaminated recreational water while swimming or camping, contact with animals, contact with human waste, certain sexual practices, or drinking contaminated water.

To better understand the nature of potential risks, in 1992 the City added a pathogen monitoring component to its comprehensive watershed monitoring program. Since then, samples have been collected weekly from the effluents of Kensico and New Croton Reservoirs, before water is first chlorinated in the Catskill/Delaware and Croton systems, respectively.

In 1997, 104 samples of Kensico Reservoir effluent and 48 samples of New Croton Reservoir effluent collected and analyzed for Giardia and Cryptosporidium showed no confirmed detections of either organism. Of the 104 Kensico Reservoir samples, three presumed positive Giardia cysts were identified, but further analysis did not confirm their presence. Likewise two presumed Cryptosporidium oocysts were identified at Kensico, but their presence was not confirmed after further analysis. The New Croton Reservoir samples produced two presumed and no confirmed Giardia cysts, and no Cryptosporidium oocysts. Additionally, the City's interagency Active Disease Surveillance unit continued to track the incidence of giardiasis and cryptosporidiosis.

How is New York City's Water Treated?

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. A small amount of fluoride (one part per million) to help prevent tooth decay has been added to the City's surface water supply since the mid-1960s in accordance with the New York City Health Code. Orthophosphate is added to create a protective film on pipes which reduces the release of metals such as lead from household plumbing. Sodium hydroxide is added to the water to raise the pH and reduce corrosivity.

A sequestering phosphate is added at several wells to keep naturally occurring minerals, mainly iron and manganese, from settling out in distribution and household piping. Air stripper facilities operate at several wells to remove volatile organic chemicals.

Water Conservation

Did you know that the average single family household in New York City uses approximately 100,000 gallons of water each year, at a cost of $1.20 per 100 cubic feet of water, or about $160.00 each year? Although New York City is fortunate to have a plentiful supply of reasonably priced drinking water, everyone should do their part to conserve this precious resource.

In its ongoing efforts to save water DEP: uses sonar equipment to survey all water supply piping for leaks; replaces approximately 40 miles of old water supply pipe each year; equips fire hydrants with special locking devices; and installs home water meters to encourage conservation. These programs and others have proven successful, and together have reduced water consumption in the City by approximately 175 million gallons per day in the last five years.

Here are some ways that you can help save water:

- Repair all leaks promptly. Leaks waste water 24 hours a day, 7 days a week. Check all faucets for leaks.
- Install aerators on all sinks and use a high-pressure, low-flow showerhead. Replacing old fixtures with water conserving models can produce substantial savings without reducing effectiveness and comfort.
- Order a Home or Apartment Water Saving Kit. If you are an apartment building owner/manager or a home owner, you can obtain a free leak survey, along with water saving showerheads and other products. Call our Leak Survey contractor at (718) 326-9426 for information.
- Water your garden in the evening instead of the heat of day to reduce evaporation.

Ensuring a Safe and Sufficient Supply of Water

The landmark New York City Watershed Memorandum of Agreement (MOA) was signed on January 21, 1997, by Mayor Rudolph W. Giuliani, Governor George E. Pataki, the USEPA, officials from watershed communities of the Hudson Valley and Catskill Mountain regions, and representatives of New York's environmental community. The Agreement is designed to protect the City's water supply well into the next century, while preserving the autonomy and economic viability of the watershed communities. The MOA initiatives fall into three major categories: Land Acquisition, Watershed Regulations and Partnership Programs.

LAND ACQUISITION

The MOA requires the City to implement a 10-year, $250 million program to acquire hydrologically sensitive watershed land. This program protects land from adverse development and helps maintain the economy and character of the region. In 1997, DEP exceeded the first year goal of soliciting the owners of 56,609 acres of watershed land. DEP placed over 9,100 acres of land under purchase contracts worth $24 million, and closed on 147 acres.

WATERSHED REGULATIONS

Revised for the first time since 1953, the Watershed Regulations in the MOA became effective on May 1, 1997. The Regulations are vital to water supply protection and provide a higher level of defense against modern-day threats to water quality. By vigorously enforcing the new Regulations, DEP is ensuring that the City's source waters are protected. These measures include aggressive policing and inspection of the watershed; greatly increased water quality monitoring; systematic inspections of sewage treatment plants; investigations of other potentially-polluting activities; and legal actions against polluters.

Another vital element of DEP's protection program is the review of proposed development projects for compliance with our new Regulations. In 1997, DEP reviewed applications for 700 new septic systems, nearly 100 stormwater pollution prevention plans, seven regulatory variances and nearly 100 other projects.

PARTNERSHIP PROGRAMS

In accordance with the terms of the MOA, the City will invest $1.2 billion in water quality-related partnership programs over the next 10 years in the watershed. In 1997, over $100 million was paid to various parties and local governments for programs stiplutated in the MOA.

In the watershed communities west of the Hudson River, three key programs funded by the City and administered locally were launched in 1997:

- Septic Rehabilitation and Replacement Program - The goal is to maintain, repair or replace all septic systems in the watershed. In the program's initial phase, the owners of nearly 300 residential septic systems that had been repaired or replaced since 1995 were reimbursed for their costs.
- Sand and Salt Storage Facilities Program - This program will improve the storage of sand, salt and other road de-icing materials to better protect water quality, which can be severely harmed by uncontrolled run-off of these materials.
- New Sewage Treatment Infrastructure Program - Of 22 possible participating communities identified in the MOA, DEP began work with seven -- whose water quality problems are greatest -- to study the feasibility of constructing sewage treatment plants.

East of the Hudson, Putnam and Westchester Counties are overseeing programs within their boundaries. In 1997, DEP began working with both counties on the Croton Planning process, outlined in the MOA and the Regulations, to identify the most effective way to deploy MOA funding to protect water quality.

Major steps were made in the 5-year program to upgrade the non-City-owned sewage treatment plants in the watershed. DEP, in partnership with the New York State Environmental Facilities Corporation, completed first round discussions with virtually all plant owners and began the coordination process for designing upgrades.

UPSTATE CAPITAL IMPROVEMENTS

The City is in the midst of a multi-year, multimillion dollar program to upgrade and improve its upstate water supply facilities, including dams, gatehouses, aqueducts, laboratories and other facilities needed to ensure the continued supply of safe and reliable drinking water. The City is also investing $160 million to rebuild the eight sewage treatment plants it owns and operates in the watershed. Incorporating the latest treatment technologies, work was substantially completed on four facilities in 1997; Grahamsville in Sullivan County, Tannersville in Greene County, Grand Gorge in Schoharie County and Mahopac in Westchester County.

Contact Us

For a copy of this report, to report unusual water characteristics, or to request a free kit to test for lead in your drinking water, call the 24-hour DEP Help Center at (718) DEP-HELP.

For more information on Giardia and Cryptosporidium, please contact the Parasitic Disease Surveillance Unit of the New York City DEP and DOH at: (212) 788-4728.

To report any polluting activities occuring in the watershed, call 1-888-DEP-NYC1, 24-hours a day.

Visit DEP's Web site at: www.ci.nyc.ny.us/dep

DRINKING WATER QUALITY CHARACTERISTICS OF NEW YORK CITY DISTRIBUTION SYSTEM FOR 1997

REGULATED CONVENTIONAL PHYSICAL AND CHEMICAL PARAMETERS

PARAMETERS (UNITS)	NYS DOH	LABORATORY	CATSKILL - DELAWARE SYSTEM			CROTON SYSTEM			GROUNDWATER SYSTEM		
	MCL	MDL	# SAMPLES	RANGE	AVERAGE	# SAMPLES	RANGE	AVERAGE	# SAMPLES	RANGE	AVERAGE
Alkalinity (mg/L Calcium Carbonate)	No designated limit	0.5	144	6.1- 13.2	9.4	44	36.8 - 56.7	45.5	72	7.3 - 189.6	50.9
Antimony (mg/L)	0.006 [1]	0.002	144	ND	ND	44	ND	ND	72	ND	ND
Arsenic (mg/L)	0.05	0.005	144	ND	ND	44	ND	ND	72	ND	ND
Barium (mg/L)	2	0.05	144	ND	ND	44	ND	ND	72	ND	ND
Beryllium (mg/L)	0.004 [1]	0.002	144	ND	ND	44	ND	ND	72	ND	ND
Cadmium (mg/L)	0.005	0.002	144	ND	ND	44	ND	ND	72	ND	ND
Chloride (mg/L)	250.0	1	144	6.6 -13.9	8.6	44	31.7 - 50.5	43.8	72	7.2 - 103.6	48.9
Chromium (mg/L)	0.1	0.002	144	ND	ND	44	ND	ND	72	ND	ND
Color - entry points (color units)	15 [2]	1	734	3 - 15	6	345	4 - 34	5	533	ND - 30	5
Copper (mg/L)	1.3 [3]	0.01	144	ND - 0.07	< 0.02	44	ND - 0.07	< 0.02	72	ND - 0.73	< 0.09
Cyanide [free] (mg/L)	0.2 [1]	0.02	144	ND	ND	44	ND	ND	72	ND	ND
Fluoride (mg/L)	2.2	0.1	9005	0.10 - 1.50	1.08	1073	0.10 - 1.28	0.99	977	ND - 1.41	< 1.03
Iron (mg/L)	0.3	0.01	144	0.01 - 0.17	0.05	44	0.02 - 0.20	0.07	72	ND - 0.58	< 0.1
Lead (mg/L)	0.015 [3]	0.001	144	ND - 0.011	< 0.001	44	ND - 0.0055	< 0.001	72	ND - 0.007	< 0.001
Manganese (mg/L)	0.3	0.01	144	ND - 0.09	< 0.03	44	0.03 - 0.30	0.07	72	ND - 0.06	< 0.01
Mercury (mg/L)	0.002	0.0002	144	ND	ND	44	ND	ND	72	ND	ND
Nickel (mg/L)	0.1 [1]	0.05	144	ND	ND	44	ND	ND	72	ND	ND
Nitrate (mg/L Nitrogen)	10	0.1	144	0.17 - 0.52	0.31	44	ND - 0.79	< 0.4	72	0.20 - 7.56	4.11
Nitrite (mg/L Nitrogen)	1	0.001	144	ND - 0.025	< 0.001	44	ND - 0.002	< 0.001	72	ND - 0.004	< 0.001
pH (pH units)	between 6.5 and 8.5	-	9005	6.0 - 7.8	-	1074	6.8 - 7.5	-	986	5.8 - 8.2	-
Selenium (mg/L)	0.01	0.002	144	ND	ND	44	ND	ND	72	ND	ND
Silver (mg/L)	0.05	0.01	144	ND	ND	44	ND	ND	72	ND	ND
Sodium (mg/L)	No designated limit	0.01	144	5.20 - 60.00	7.45	44	10.20 - 27.31	20.66	72	5.60 - 50.50	23.24
Specific Conductance (µmho/ cm)	No designated limit	-	9005	64 - 179	78	1074	180 - 340	225	986	101- 846	341
Sulfate (mg/L)	250	2	144	6.30 - 9.20	7.7	44	10.40 - 14.60	12.6	72	7.10 - 87.50	38.1
Temperature (° F)	No designated limit	-	9009	35 - 79	54	1074	37 - 80	53	986	30 - 79	58
Thallium (mg/L)	0.002 [1]	0.002	144	ND	ND	44	ND	ND	72	ND	ND
Turbidity (NTU)	5 [4]	0.1	9005	0.1 - 7.3	0.8	1074	0.3 - 2.7	0.8	986	0.1- 7.3	0.4
Zinc (mg/L)	5	0.01	144	ND - 0.01	< 0.01	44	ND	ND	72	ND - 0. 47	< 0.04

MCL = Maximum Contaminant Level MDL = Minimum Detection Limit - lowest level the analytical method can detect mg/L = milligrams per liter ND = Not Detected

[1] USEPA MCL. NYSDOH has not set an MCL for this parameter.

[2] MCL is based on the average of a sample which is greater than 15 and a second sample collected from the same site within two weeks. In the Croton System there were 8 color violations between July and November 1997. The Groundwater System exeperienced three violations at well 50/50A on: 4/15/97, 8/5/97, and 10/1/97.

[3] Action limit (not an MCL)

[4] MCL is the monthly average. Although single values are greater than 5 NTU, no monthly average for any system exceeded the MCL.

DRINKING WATER QUALITY CHARACTERISTICS OF NEW YORK CITY DISTRIBUTION SYSTEM FOR 1997

UNREGULATED CONVENTIONAL CHEMICALS AND PHYSICAL PARAMETERS

PARAMETERS (UNITS)	NYS DOH	LABORATORY	CATSKILL - DELAWARE SYSTEM			CROTON SYSTEM			GROUNDWATER SYSTEM		
	MCL	MDL	# SAMPLES	RANGE	AVERAGE	# SAMPLES	RANGE	AVERAGE	# SAMPLES	RANGE	AVERAGE
Aluminum (mg/L)	0.05 to 0.2 [5]	0.01	144	ND - 0.08	< 0.02	44	ND - 0.06	< 0.01	72	ND - 0. 90	< 0.01
Ammonia (mg/L Nitrogen)		0.03	144	ND	ND	44	ND	ND	72	ND	ND
Boron (mg/L)		0.02	144	ND - 0.10	< 0.05	44	0.03 - 0.13	0.07	72	0.02 - 0. 20	0.09
Calcium (mg/L)		0.02	144	ND	ND	44	ND	ND	72	ND	ND
Carbon Dioxide (mg/L)		0.2	12	1.32 - 3.52	2	11	2.64 - 5.28	3.98	-	-	-
Chemical Oxygen Demand (mg/L Oxygen)		1	144	0.9- 8.8	3.9	44	4.6 - 9.4	6.9	72	ND - 9.8	< 1.34
Color - distribution systems (color units)		1	7842	2 - 100	7	737	4 - 30	9	1399	1 - 80	5
Corrosivity	Non-corrosive [5] [6]	-	144	- 3.24 to -2.26	-2.7	44	-1.72 to -1.02	-1.44	72	-3.38 to 0.84	-1.47
Dissolved Oxygen (mg/L)		1	12	4.8 - 12.6	8.8	11	4.0 - 11.8	8.4	-	-	-
Dissolved Solids (mg/L)	500[5]	5	144	23 - 78	43	44	124 - 174	150	72	39 - 616	213
Foaming Agents (mg/L Linear Alkyl Sulfonate)	0.5[5]	0.01	144	ND	ND	44	ND	ND	72	ND	ND
Hardness (grains/gallon [US] Calcium Carbonate) [7]		0.03	144	0.8 - 1.6	1.1	44	3.5 - 5.3	4.4	72	1.1 - 21.3	6.8
Iodide (mg/L)		0.01	144	ND	ND	44	ND	ND	72	ND	ND
Lithium (mg/L)		0.01	144	ND	ND	44	ND	ND	72	ND	ND
Magnesium (mg/L)		0.1	144	1.00 - 2.20	1.26	44	4.66 - 8.40	6.59	72	1.60 - 38.00	13.76
Phenols (mg/L Phenol)		0.002	140	ND	ND	44	ND	ND	72	ND	ND
Orthophosphate (mg/L)		0.02	8582	< 0.10 - 3.30	< 1.28	1074	< 0.10 - 2.20	< 1.12	1399	0.03 - 2.17	1.25
Potassium (mg/L)		0.1	144	0.41 - 0.86	0.58	44	1.32 - 1.96	1.69	72	0.47 - 3.10	1.58
Silica [Silicon Dioxide] (mg/L)		0.2	144	1.20 - 4.40	2.8	44	3.10 - 7.40	4.9	72	2.60 - 29.80	15.8
Strontium (mg/L)		0.05	144	ND	ND	44	ND	ND	72	ND	ND
Total Organic Carbon (mg/L Carbon)		0.15	144	0.80 - 2.70	1.7	44	1.40 - 3.00	2.38	72	ND - 2.10	< 0.56
Total Organic Halogen (mg/L)		0.02	140	0.061 - 0.257	0.152	43	0.121 - 0.494	0.248	65	ND - 0.138	< 0.045

MCL = Maximum Contaminant Level MDL = Minimum Detection Limit - lowest level the analytical method can detect mg/L = milligrams per liter ND = Not Detected

[5] USEPA Secondary Maximum Contaminant Level. NYSDOH has not set an MCL for this parameter.
[6] A Lanelier Index value less than zero indicates corrosive tendencies.
[7] Hardness of up to 3 grains/gallon is considered soft water, between 3 and 9 is moderately hard.

DRINKING WATER QUALITY CHARACTERISTICS OF NEW YORK CITY DISTRIBUTION SYSTEM FOR 1997

REGULATED ORGANIC CONTAMINANTS

PARAMETERS (mg/L)	NYS DOH	LABORATORY	CATSKILL - DELAWARE SYSTEM			CROTON SYSTEM			GROUNDWATER SYSTEM		
	MCL	MDL	# SAMPLES	RANGE	AVERAGE	# SAMPLES	RANGE	AVERAGE	# SAMPLES	RANGE	AVERAGE
Total Trihalomethanes [8]	0.1	0.002	144	0.009 - 0.062	0.029	44	0.034 - 0.065	0.047	72	ND - 0.033	< 0.009
Principal Organic Contaminants:											
Benzene	0.005	0.0005	144	ND	ND	44	ND	ND	96	ND	ND
Bromobenzene	0.005	0.0005	144	ND	ND	44	ND	ND	96	ND	ND
Bromochloromethane	0.005	0.0005	144	ND	ND	44	ND	ND	96	ND	ND
Bromomethane	0.005	0.0005	144	ND	ND	44	ND	ND	96	ND	ND
n-Butylbenzene	0.005	0.0005	144	ND	ND	44	ND	ND	96	ND	ND
sec-Butylbenzene	0.005	0.0005	144	ND	ND	44	ND	ND	96	ND	ND
tert-Butylbenzene	0.005	0.0005	144	ND	ND	44	ND	ND	96	ND	ND
Carbon tetrachloride	0.005	0.0005	144	ND	ND	44	ND	ND	96	ND	ND
Chlorobenzene	0.005	0.0005	144	ND	ND	44	ND	ND	96	ND	ND
Choloroethane	0.005	0.0005	144	ND	ND	44	ND	ND	96	ND	ND
Chloromethane	0.005	0.0005	144	ND	ND	44	ND	ND	96	ND	ND
2-Chlorotoluene	0.005	0.0005	144	ND	ND	44	ND	ND	96	ND	ND
4-Chlorotoluene	0.005	0.0005	144	ND	ND	44	ND	ND	96	ND	ND
Dibromomethane	0.005	0.0005	144	ND	ND	44	ND - 0.0006*	ND	96	ND - 0.001*	ND
1,2-Dichlorobenzene	0.005	0.0005	144	ND	ND	44	ND	ND	96	ND	ND
1,3-Dichlorobenzene	0.005	0.0005	144	ND	ND	44	ND	ND	96	ND	ND
1,4-Dichlorobenzene	0.005	0.0005	144	ND - 0.0014	<0.0005083	44	ND	ND	96	ND	ND
Dichlorodifluoromethane	0.005	0.0005	144	ND	ND	44	ND	ND	96	ND - 0.0013	< 0.0005177
1,1-Dichloroethane	0.005	0.0005	144	ND	ND	44	ND	ND	96	ND	ND
1,2-Dichloroethane	0.005	0.0005	144	ND	ND	44	ND	ND	96	ND	ND
1,1-Dichloroethene	0.005	0.0005	144	ND	ND	44	ND	ND	96	ND	ND
cis-1,2-Dichloroethene	0.005	0.0005	144	ND	ND	44	ND	ND	96	ND - 0.0014	< 0.0005156
trans-1,2-Dichloroethene	0.005	0.0005	144	ND	ND	44	ND	ND	96	ND	ND
1,2-Dichloropropane	0.005	0.0005	144	ND	ND	44	ND	ND	96	ND	ND
1,3-Dichloropropane	0.005	0.0005	144	ND	ND	44	ND	ND	96	ND	ND
2,2-Dichloropropane	0.005	0.0005	144	ND	ND	44	ND	ND	96	ND	ND
1,1-Dichloropropene	0.005	0.0005	144	ND	ND	44	ND	ND	96	ND	ND
cis-1,3-Dichloropropene	0.005	0.0005	120	ND	ND	36	ND	ND	80	ND	ND
trans-1,3-Dichloropropene	0.005	0.0005	120	ND	ND	36	ND	ND	80	ND	ND
Ethylbenzene	0.005	0.0005	144	ND	ND	44	ND	ND	96	ND	ND
Hexachlorobutadiene	0.005	0.0005	144	ND	ND	44	ND	ND	96	ND	ND
Isopropylbenzene	0.005	0.0005	144	ND	ND	44	ND	ND	96	ND	ND
p-Isopropyltoluene	0.005	0.0005	144	ND	ND	44	ND	ND	96	ND	ND
Methylene Chloride	0.005	0.0005	144	ND - 0.0008	<0.0005049	44	ND - 0.0006	<0.00050027	96	ND - 0.0007*	ND
n-Propylbenzene	0.005	0.0005	144	ND	ND	44	ND	ND	96	ND	ND
Styrene	0.005	0.0005	144	ND	ND	44	ND	ND	96	ND	ND
1,1,1,2-Tetrachloroethane	0.005	0.0005	144	ND	ND	44	ND	ND	96	ND	ND
1,1,2,2-Tetrachloroethane	0.005	0.0005	144	ND	ND	44	ND	ND	96	ND	ND
Tetrachloroethene	0.005	0.0005	144	ND	ND	44	ND	ND	96	ND - 0.0047	< 0.0010418
Toluene	0.005	0.0005	144	ND	ND	44	ND	ND	96	ND	ND
1,2,3-Trichlorobenzene	0.005	0.0005	144	ND	ND	44	ND	ND	96	ND	ND
1,2,4-Trichlorobenzene	0.005	0.0005	144	ND	ND	44	ND	ND	96	ND	ND
1,1,1-Trichloroethane	0.005	0.0005	144	ND - 0.0013	<0.0005132	44	ND - 0.001*	ND	96	ND	ND
1,1,2-Trichloroethane	0.005	0.0005	144	ND	ND	44	ND	ND	96	ND	ND
Trichloroethene	0.005	0.0005	144	ND	ND	44	ND	ND	96	ND - 0.0006	< 0.0005021
Trichlorofluoromethane	0.005	0.0005	144	ND	ND	44	ND	ND	96	ND	ND
1,2,3-Trichloropropane	0.005	0.0005	144	ND	ND	44	ND	ND	96	ND	ND
1,2,4-Trimethylbenzene	0.005	0.0005	144	ND	ND	44	ND	ND	96	ND	ND
1,3,5-Trimethylbenzene	0.005	0.0005	144	ND	ND	44	ND	ND	96	ND	ND
m-Xylene	0.005	0.0005	144	ND	ND	44	ND	ND	96	ND	ND
o-Xylene	0.005	0.0005	144	ND	ND	44	ND	ND	96	ND	ND
p-Xylene	0.005	0.0005	144	ND	ND	44	ND	ND	96	ND	ND

MCL = Maximum Contaminant Level MDL = Minimum Detection Limit mg/L = milligrams per liter ND = Not Detected

[8] MCL is the calculated quarterly running average. In 1997 the MCL was never exceeded. Data presented are based on individual sample results.

* Only one sample was detected with the contaminant at levels below the MCL.

DRINKING WATER QUALITY CHARACTERISTICS OF NEW YORK CITY DISTRIBUTION SYSTEM FOR 1997

SPECIFIED ORGANIC CHEMICALS

PARAMETERS (mg/L)	NYS DOH	LABORATORY	CATSKILL - DELAWARE SYSTEM			CROTON SYSTEM			GROUNDWATER SYSTEM		
	MCL	MDL	# SAMPLES	RANGE	AVERAGE	#SAMPLES	RANGE	AVERAGE	#SAMPLES	RANGE	AVERAGE
Alachlor	0.002	0.000003	10	ND	ND	5	ND	ND	10	ND	ND
Aldicarb	0.003	0.001	24	ND	ND	11	ND	ND	24	ND	ND
Aldicarb Sulfone	0.002	0.002	24	ND	ND	11	ND	ND	24	ND	ND
Aldicarb Sulfoxide	0.004	0.002	24	ND	ND	11	ND	ND	24	ND	ND
Aldrin	0.005	0.000003	10	ND	ND	5	ND	ND	10	ND	ND
Atrazine	0.003	0.000003	10	ND	ND	5	ND	ND	10	ND	ND
Benzo(a)pyrene	0.05	0.00002	16	ND	ND	7	ND	ND	16	ND	ND
Butachlor	0.05	0.0005	22	ND	ND	10	ND	ND	22	ND	ND
Carbaryl	0.05	0.002	24	ND	ND	11	ND	ND	24	ND	ND
Carbofuran	0.04	0.0015	24	ND	ND	11	ND	ND	24	ND	ND
Chlordane	0.002	0.0005	2	ND	ND	1	ND	ND	2	ND	ND
2,4-D	0.05	0.002	10	ND	ND	5	ND	ND	10	ND	ND
Dalapon	0.05	0.00032	47	ND - 0.00210	< 0.00067	16	0.00043 - 0.00121	< 0.00082	32	ND	ND
Dibromochloropropane [DBCP]	0.0002	0.00007	45	ND	ND	9	ND	ND	24	ND	ND
Di(2-ethylhexyl)adipate	0.05	0.001	2	ND	ND	1	ND	ND	2	ND	ND
Di(2-ethylhexyl)phthalate	0.05	0.003	2	ND	ND	1	ND	ND	2	ND	ND
Dicamba	0.05	0.002	10	ND	ND	5	ND	ND	10	ND	ND
Dieldrin	0.005	0.000003	10	ND	ND	5	ND	ND	10	ND	ND
Dinoseb	0.05	0.002	10	ND	ND	5	ND	ND	10	ND	ND
Diquat	0.05	0.001	24	ND	ND	11	ND	ND	24	ND	ND
Endrin	0.0002	0.000004	10	ND	ND	5	ND	ND	10	ND	ND
Endothall	0.05	0.005	2	ND	ND	1	ND	ND	2	ND	ND
Ethylene Dibromide [EDB]	0.00005	0.00005	34	ND	ND	6	ND	ND	24	ND	ND
Glyphosate	0.05	0.009	2	ND	ND	1	ND	ND	2	ND	ND
Heptachlor	0.0004	0.000003	10	ND	ND	5	ND	ND	10	ND	ND
Heptachlor Epoxide	0.0002	0.000001	10	ND	ND	5	ND	ND	10	ND	ND
Hexachlorobenzene	0.005	0.000002	10	ND	ND	5	ND	ND	10	ND - 0.005	< 0.0023
Hexachlorocyclopentadiene	0.05	0.000004	10	ND	ND	5	ND	ND	10	ND - 0.020	< 0.006
3-Hydroxycarbofuran	0.05	0.002	24	ND	ND	11	ND	ND	24	ND	ND
Lindane	0.0002	0.000025	2	ND	ND	1	ND	ND	2	ND	ND
Methomyl	0.05	0.0005	24	ND	ND	11	ND	ND	24	ND	ND
Metolachor	0.05	0.000005	10	ND	ND	5	ND	ND	10	ND	ND
Metribuzin	0.05	0.000005	10	ND	ND	5	ND	ND	10	ND	ND
Methoxychlor	0.04	0.000009	10	ND	ND	5	ND	ND	10	ND	ND
Oxamyl [Vydate]	0.05	0.002	24	ND	ND	11	ND	ND	24	ND	ND
Pentachlorophenol	0.001	0.002	10	ND	ND	5	ND	ND	10	ND	ND
Picloram	0.05	0.001	10	ND	ND	5	ND	ND	10	ND	ND
Polychlorobiphenyls [PCBs] [9]	0.0005	0.0005	2	ND	ND	1	ND	ND	2	ND	ND
Propachlor	0.05	0.000005	10	ND	ND	5	ND	ND	10	ND	ND
Simazine	0.05	0.000003	10	ND	ND	5	ND	ND	10	ND	ND
2,4,5-TP (Silvex)	0.01	0.002	10	ND	ND	5	ND	ND	10	ND	ND
Toxaphene	0.003	0.0025	2	ND	ND	1	ND	ND	2	ND	ND
Vinyl Chloride	0.002	0.0005	144	ND	ND	44	ND	ND	72	ND	ND

MCL = Maximum Contaminant Level MDL = Minimum Detection Limit mg/L = milligrams per liter ND = Not Detected

[9] Total PCBs (< 0.0005 mg/l)

DRINKING WATER QUALITY CHARACTERISTICS OF NEW YORK CITY DISTRIBUTION SYSTEM FOR 1997

UNSPECIFIED ORGANIC CHEMICALS

PARAMETERS (mg/L)	NYS DOH	LABORATORY	CATSKILL - DELAWARE SYSTEM			CROTON SYSTEM			GROUNDWATER SYSTEM		
	MCL	MDL	# SAMPLES	RANGE	AVERAGE	# SAMPLES	RANGE	AVERAGE	# SAMPLES	RANGE	AVERAGE
Acenaphthene	0.05	0.003	16	ND	ND	7	ND	ND	16	ND	ND
Acenaphthylene	0.05	0.003	16	ND	ND	7	ND	ND	16	ND	ND
Anthracene	0.05	0.0002	16	ND	ND	7	ND	ND	16	ND	ND
Baygon (propoxur)	0.05	0.001	24	ND	ND	11	ND	ND	24	ND	ND
Benzo[a]anthracene	0.05	0.000008	16	ND	ND	7	ND	ND	16	ND	ND
Benzo[b]fluoranthene	0.05	0.000006	16	ND	ND	7	ND	ND	16	ND	ND
Benzo[k]fluoranthene	0.05	0.000003	18	ND	ND	8	ND	ND	18	ND	ND
Benzo[g,h,i]perylene	0.05	0.00002	18	ND	ND	8	ND	ND	18	ND	ND
alpha-BHC	0.005	0.000001	10	ND	ND	5	ND	ND	10	ND	ND
beta-BHC	0.005	0.000009	10	ND	ND	5	ND	ND	10	ND	ND
delta-BHC	0.005	0.000002	8	ND	ND	4	ND	ND	8	ND	ND
gamma-BHC	0.0002	0.000006	10	ND	ND	5	ND	ND	10	ND	ND
Bromochloroacetic acid	0.05	0.00006	143	0.00050 - 0.01050	0.00163	43	0.00070 - 0.00473	0.00274	96	ND - 0.00278	< 0.00079
Bromochloroacetonitrile	0.05	0.0001	48	ND - 0.00218	< 0.00066	12	0.00078 - 0.00261	0.00133	36	ND - 0.00149	< 0.00052
Carboxin	0.005	0.0005	22	ND	ND	10	ND	ND	22	ND	ND
Chloral Hydrate	0.05	0.00005	58	0.00130 - 0.01621	0.00431	12	0.00427 - 0.01254	0.00688	36	ND - 0.00373	< 0.0011
Chlorobenzilate	0.005	0.000002	10	ND	ND	5	ND	ND	10	ND	ND
Chloropicrin	0.05	0.0001	58	ND - 0.00228	< 0.0009	12	0.00061 - 0.00252	0.00104	36	ND - 0.00150	< 0.00022
Chloroneb	0.005	0.000006	10	ND	ND	5	ND	ND	10	ND	ND
Chlorothalonil	0.05	0.000002	10	ND	ND	5	ND	ND	10	ND	ND
Chrysene	0.005	0.0002	18	ND	ND	8	ND	ND	18	ND	ND
Cyanazine	0.05	0.000007	10	ND	ND	5	ND	ND	10	ND	ND
Dacthal (DCPA)	0.005	0.000009	10	ND	ND	5	ND	ND	10	ND	ND
2,4-DB	0.05	0.00002	10	ND	ND	10	ND	ND	10	ND	ND
4,4'-DDD	0.005	0.000003	10	ND	ND	5	ND	ND	10	ND	ND
4,4'-DDE	0.005	0.000003	10	ND	ND	5	ND	ND	10	ND	ND
4,4'-DDT	0.005	0.000004	10	ND	ND	5	ND	ND	10	ND	ND
Diazinon	0.05	0.0005	22	ND	ND	10	ND	ND	22	ND	ND
Dibenzo[a,h]anthracene	0.05	0.00004	18	ND	ND	8	ND	ND	18	ND	ND
Dibromoacetic acid	0.05	0.00008	131	ND - 0.00062	< 0.00017	39	ND - 0.00073	< 0.00025	88	ND - 0.00343	< 0.00085
Dibromoacetonitrile	0.05	0.00007	48	ND - 0.00163	< 0.00034	12	ND - 0.00178	< 0.00027	38	ND - 0.00279	< 0.00085
Dichloroacetic acid	0.05	0.00016	143	0.00788 - 0.03050	0.01889	43	0.00746 - 0.04099	0.01918	96	ND - 0.02470	< 0.00346
Dichloroacetonitrile	0.05	0.00007	58	0.00092 - 0.00345	0.00204	12	0.00353 - 0.00654	0.00492	36	ND - 0.00191	< 0.0005
1,1-Dichloropropanone-2	0.05	0.0001	58	0.00038 - 0.00176	0.00081	12	0.00075 - 0.00242	0.0013	36	ND - 0.00111	< 0.00035
Endosulfan-I	0.005	0.000006	10	ND	ND	5	ND	ND	10	ND	ND
Endosulfan-II	0.005	0.000001	10	ND	ND	5	ND	ND	10	ND	ND
Endosulfan Sulfate	0.005	0.000003	10	ND	ND	5	ND	ND	10	ND	ND
Endrin Aldehyde	0.005	0.000004	10	ND	ND	5	ND	ND	10	ND	ND
Etridiazole	0.05	0.000014	10	ND	ND	5	ND	ND	10	ND	ND
Fluoranthene	0.05	0.00001	16	ND	ND	7	ND	ND	16	ND	ND
Fluorene	0.005	0.0003	18	ND	ND	8	ND	ND	18	ND	ND
Indeno[1,2,3-cd]pyrene	0.005	0.00007	16	ND	ND	8	ND	ND	16	ND	ND
Methiocarb	0.05	0.004	24	ND	ND	11	ND	ND	24	ND	ND
Methyl tert-butyl ether	0.05	0.0005	148	ND - 0.0094	0.000794	52	ND - 0.0048	0.000629	117	ND - 0.0149	0.001692
MGK-264	0.05	0.0005	22	ND	ND	10	ND	ND	22	ND	ND
Monobromoacetic acid	0.05	0.00011	147	ND - 0.00040	< 0.00016	39	ND - 0.00050	< 0.00024	96	ND - 0.00093	< 0.00018
Monochloroacetic acid	0.05	0.00019	143	0.00035 - 0.00280	0.00114	43	0.00020 - 0.01830	1.04	96	ND - 0.00323	< 0.00113
Napthalene	0.05	0.003	18	ND	ND	8	ND	ND	18	ND	ND
Norflurazon	0.005	0.0005	22	ND	ND	10	ND	ND	22	ND	ND
Paraquat	0.05	0.001	24	ND	ND	11	ND	ND	24	ND	ND
cis-Permethrin	0.005	0.000009	10	ND	ND	5	ND	ND	10	ND	ND
trans-Permethrin	0.005	0.000007	10	ND	ND	5	ND	ND	10	ND	ND
Phenanthrene	0.05	0.0002	18	ND	ND	8	ND	ND	18	ND	ND

DRINKING WATER QUALITY CHARACTERISTICS OF NEW YORK CITY DISTRIBUTION SYSTEM FOR 1997

UNSPECIFIED ORGANIC CHEMICALS

(Continued)

PARAMETERS (mg/L)	NYS DOH	LABORATORY	CATSKILL - DELAWARE SYSTEM			CROTON SYSTEM			GROUNDWATER SYSTEM		
	MCL	MDL	# SAMPLES	RANGE	AVERAGE	# SAMPLES	RANGE	AVERAGE	# SAMPLES	RANGE	AVERAGE
Pyrene	0.05	0.0004	16	ND	ND	7	ND	ND	16	ND	ND
Terbufos	0.05	0.0005	22	ND	ND	10	ND	ND	22	ND	ND
Tetrachloroterephthalic acid (TCPA)	0.005	0.005	10	ND	ND	5	ND	ND	10	ND	ND
Trichloroacetic Acid	0.05	0.00007	131	0.00938 - 0.05200	0.02426	39	0.02340 - 0.06410	0.0412	88	ND - 0.03350	< 0.00475
Trichloroacetonitrile	0.05	0.0001	58	ND - 0.00073	< 0.00012	12	ND - 0.00257	< 0.00056	39	ND	ND
1,1,1-Trichloropropanone	0.05	0.0001	58	0.00145 - 0.00418	0.00242	12	0.00222 - 0.00621	0.00411	36	ND - 0.00195	< 0.00061
Trifluralin	0.05	0.000001	10	ND	ND	5	ND	ND	10	ND	ND
Vernolate	0.05	0.0005	22	ND	ND	10	ND	ND	22	ND	ND

MCL = Maximum Contaminant Level MDL = Minimum Detection Limit mg/L = milligrams per liter ND = Not Detected

DRINKING WATER QUALITY CHARACTERISTICS OF NEW YORK CITY DISTRIBUTION SYSTEM FOR 1997

MICROBIAL ANALYSIS FOR COLIFORM BACTERIA

MONTH	TOTAL # SAMPLES ANALYZED	# SAMPLES POSITIVE FOR TOTAL COLIFORM	# SAMPLES POSITIVE FOR E. COLI	PERCENT OF SAMPLES CONTAINING COLIFORM (%)[10]	PERCENT OF SAMPLES CONTAINING E. COLI (%)[11]
Jan -97	899	1	0	0.1	0.0
Feb -97	823	1	0	0.1	0.0
Mar-97	937	0	0	0.0	0.0
Apr-97	913	2	0	0.2	0.0
May-97	944	0	0	0.0	0.0
Jun-97	913	6	1	0.7	0.1
Jul-97	972	6	0	0.6	0.0
Aug-97	930	1	0	0.1	0.0
Sep-97	924	1	0	0.1	0.0
Oct-97	955	2	0	0.2	0.0
Nov-97	910	3	0	0.3	0.0
Dec-97	949	1	0	0.1	0.0
Totals:	11069	24	1	0.2	0.0

[10] New York State DOH permits up to 5 percent of total coliform samples each month to be positive.

[11] A violation occrus if a sample and its repeat sample are both positive for coliform and one of the two samples is E. coli.