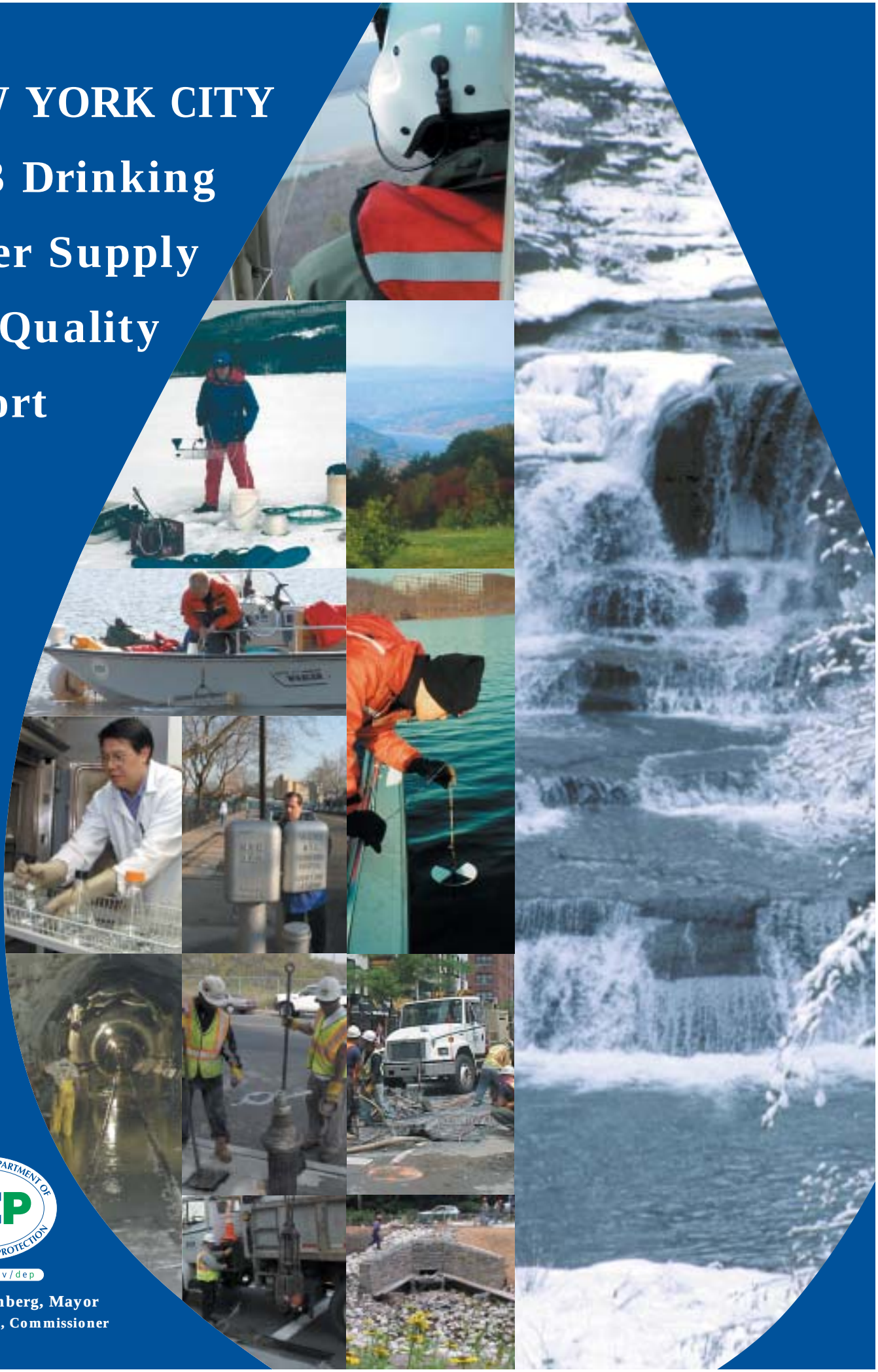
# NEW YORK CITY 2003 Drinking Water Supply and Quality Report



NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION

DEP

www.nyc.gov/dep

**Michael R. Bloomberg, Mayor**
**Christopher O. Ward, Commissioner**

# NEW YORK CITY 2003
# DRINKING WATER SUPPLY AND QUALITY REPORT

*The New York City Department of Environmental Protection (DEP) is pleased to present its 2003 Annual Water Quality Report. This presentation is in accordance with Part 5-1.72 of the New York State Sanitary Code (10NYCRR), and the National Primary Drinking Water Regulations, 40 CFR Part 141 Subpart O, of the United States Environmental Protection Agency (EPA), which require all drinking water suppliers to provide the public with an annual statement describing the water supply and the quality of its water.*

## New York City's Water System

The New York City surface (reservoir) water supply system provides approximately 1.2 billion gallons of safe drinking water daily to over 8 million residents of New York City, approximately one million people living in Westchester, Putnam, Ulster, and Orange counties, as well as millions of tourists and commuters who visit the City throughout the year. In addition to our surface water supplies, approximately 350,000 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.

New York City's surface water is supplied from a network of 19 reservoirs and three controlled lakes in a 1,972 square-mile watershed that extends 125 miles north and west of New York City. Approximately 90% of our water comes from the Catskill/Delaware System (Public Water System Identification Number [PWSID] NY7003493), located in Delaware, Greene, Schoharie, Sullivan, and Ulster counties. The Croton System (PWSID NY7003666), the City's original upstate supply, normally provides about 10% of our daily water from 12 reservoir basins in Putnam, Westchester, and Dutchess counties. In 2003, the Groundwater System (PWSID NY7011735) in southeastern Queens supplied a daily average of 9 million gallons of drinking water from 13 wells, less than 1% of the City's total usage.

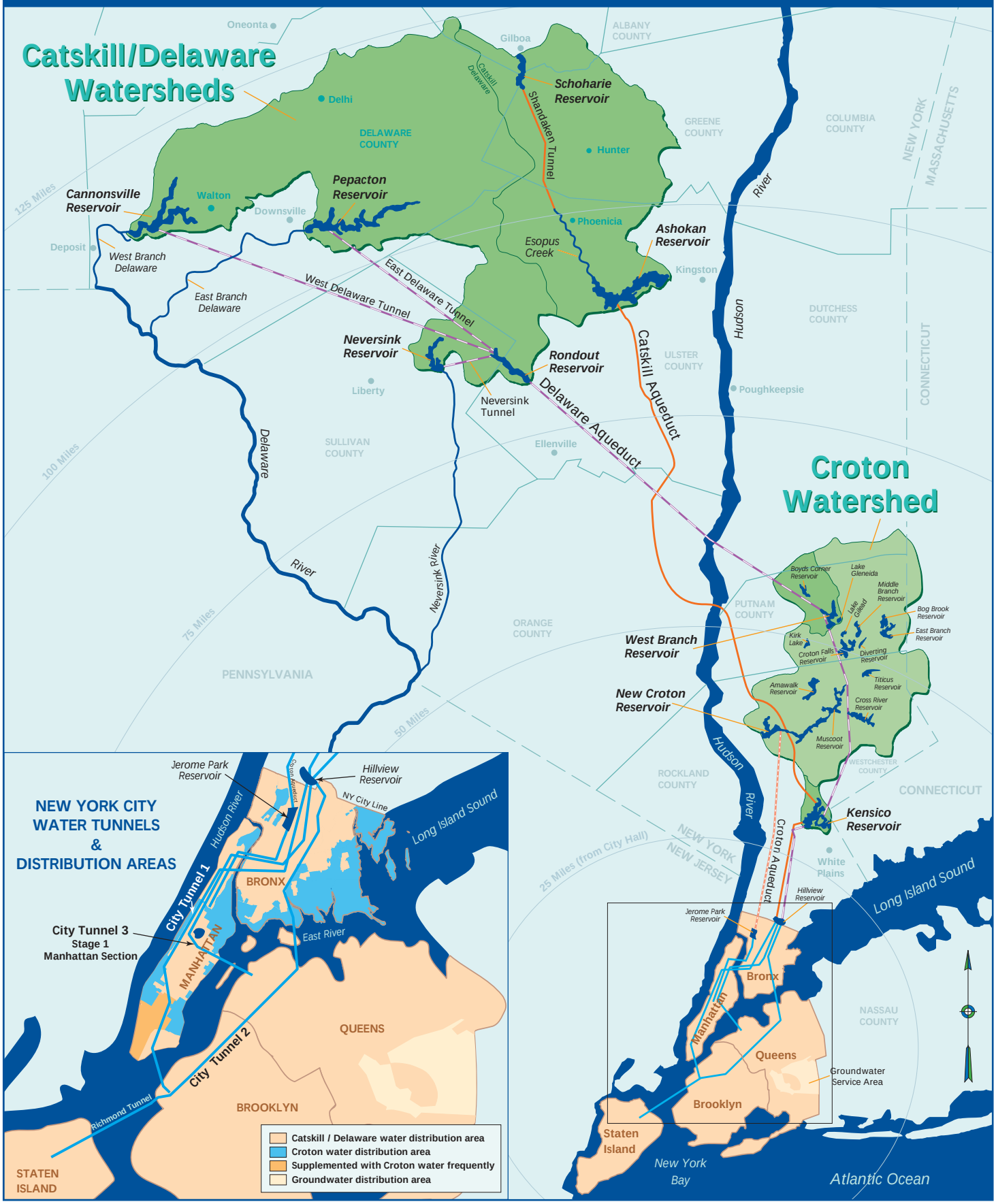
DEP's Bureau of Water Supply is responsible for the collection, conveyance and treatment of water from the upstate reservoirs into the City, as well as monitoring drinking water quality in the distribution system. The Department's Bureau of Water and Sewer Operations is responsible for the operation and maintenance of the water distribution system, which delivers water to City residents and provides fire protection, as well as the sewer system, which collects "used" water, sanitary sewage, and storm water and transports this flow to the City's wastewater treatment plants. DEP's Bureau of Wastewater Treatment is responsible for the operation of the City's wastewater treatment plants and related infrastructure to ensure that treated water released back into the environment is safe and meets high water quality standards.

## New York City's Water Distribution and Sewer Systems

The City's water distribution infrastructure consists of 2 distribution reservoirs (Jerome Park Reservoir in the Bronx and Hillview Reservoir in Yonkers), 3 major in-City water tunnels, 8 drinking water pumping stations, 45 groundwater wells, the world's two largest underground storage tanks, 6,890 miles of water main, 217,477 valves, and 109,100 fire hydrants. The sewer system is comprised of 6,484 miles of sewer mains and 140,000 catch basins.

Within New York City, DEP's Bureau of Water and Sewer Operations (BWSO) is responsible for the operation, maintenance and protection of the water distribution system, the stormwater and sewer collection systems, the protection of adjacent waterways and natural drainage systems, and the planning and execution of DEP's Capital Water and Sewer Infrastructure Program. The Bureau's 1300 employees include water and sewer field workers, engineers, operators, machinists, electricians, plumbers, metallurgists, inspectors, and administrators. Their efforts include the following activities:

# New York City's Water Supply System



Water Main Break Repair

## Response to Water Main Breaks and Leakage

Typically, DEP responds to approximately 600 water main breaks per year, and hundreds more reported leaks. Water main breaks may be caused by a number of factors acting either alone or in concert on a water pipe. These factors include concentrated loading from contact with other structures, non-uniform or disrupted fill around the pipe, extreme cold, vibrations, traffic loading, corrosive soils, leakage, manufacturing defects, water pressure changes, stray electrical currents and construction activity around the pipe. Over the past few decades, DEP and its construction agent, the NYC Department of Design and Construction, have improved the materials, installation practices and coordination of subsurface construction with other utilities to minimize the future occurrence of water main breaks and leaks.

Leak detection – a program using sonar equipment to identify leaks in water supply piping prior to a full break – has aided city-wide conservation efforts. In FY 2003, the Leak Detection Unit was able to locate and address leaks in the system that amounted to an estimated 60 million gallons of water per day.

Leak Detection

## Sewer Backups

Sewer backups occur when sewers or sewer connections break or become clogged by tree roots, cooking grease, or large insoluble items which may be flushed down a toilet. In addition, because of the combined nature of New York's sewer system, street litter may become mixed with household sewage to block a sewer main. Because sewer back-ups may affect the health of City residents or cause property damage, DEP's rapid response to these complaints is critical; 99.7% of all sewer back-ups are resolved in less than 24 hours. Over the past twenty years, DEP's initial response time to these complaints has been reduced by more than 50%, from approximately 9 hours in 1983 to 4 hours in 2003.

## Catch Basin Maintenance and Cleaning

Catch basins are structures placed at street intersections or other low points in the street system to capture rainwater or snow melt and convey the water to either a sewage treatment plant or local waterway. Approximately 70% of New York City's sewer system is combined, with sanitary and storm flow moving through the same mains. Usually, both sanitary sewage and storm water are carried by the sewer system to one of the City's 14 wastewater treatment plants. During periods of significant rainfall, however, the combined flow of sanitary and storm water can be greater than the capacity of the treatment plants; when this occurs, untreated wastewater may be released from the sewer system into local water bodies.

Catch Basin Cleaning

Since catch basins are so critical to prevent street flooding, it is important for the inlet gates to remain free of fallen leaves, street trash, and other floatables. In order to ensure the efficient operation of catch basins, DEP cleans the basins regularly to prevent them from becoming filled with debris. DEP's responsiveness to catch basin complaints and service requests has increased dramatically over the past two decades. For example, the backlog of catch basin complaints has been reduced by 93%, and the number of catch basins cleaned annually has increased by 67%.

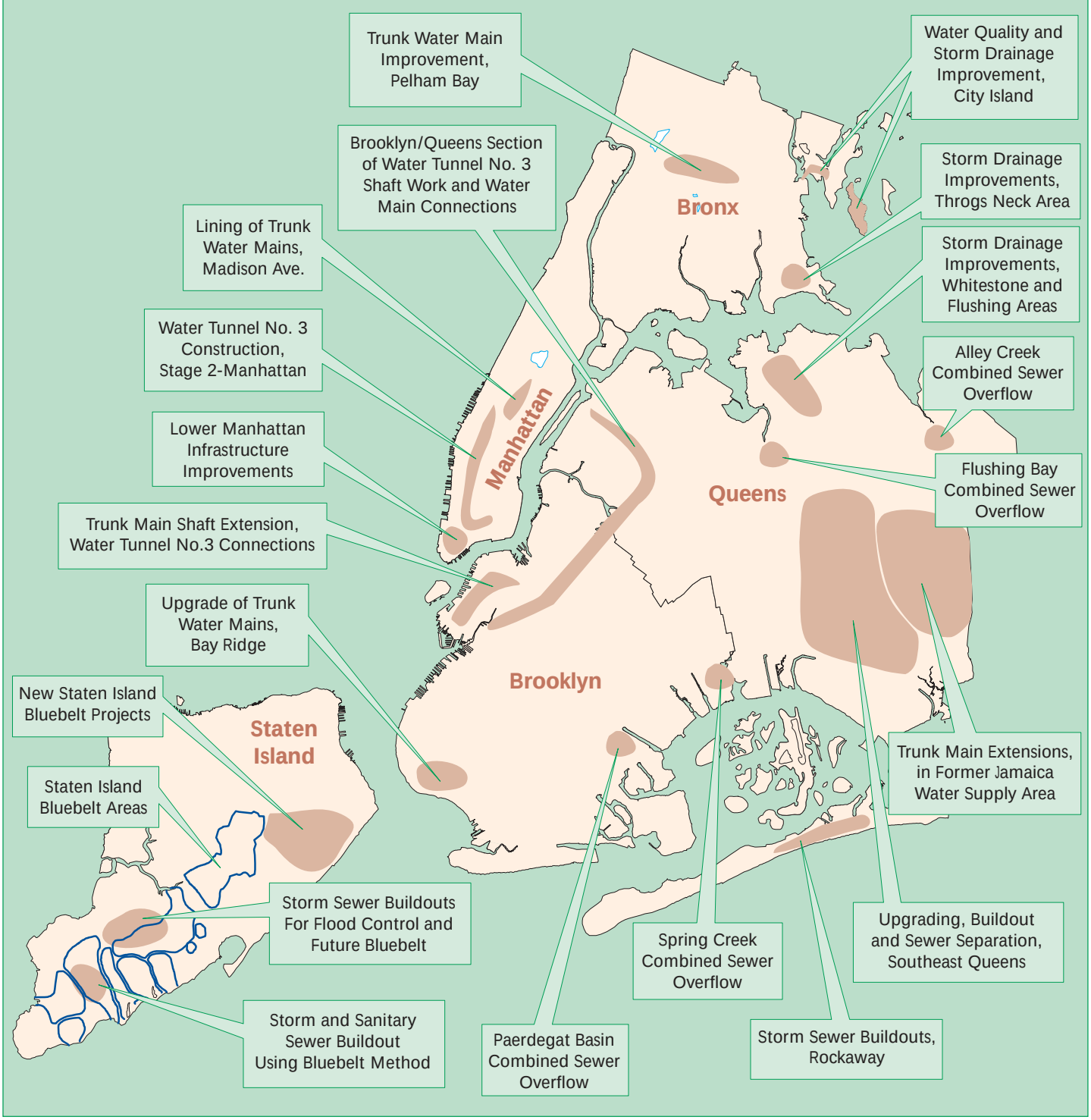
## System Improvements

DEP plans to invest $350 million annually for the next ten years to upgrade and maintain the City's water and sewer infrastructure. In addition to this programmatic work, DEP is working to provide several major enhancements to the City's drinking water and sewer infrastructure.

NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION

# MAJOR CAPITAL INFRASTRUCTURE PROJECTS

## Fiscal Years 2003 - 2005



Tunnel No. 3 Construction

## *City Water Tunnel No. 3*

Construction continues on City Tunnel No. 3, one of the largest capital construction projects in New York City's history. Tunnel No. 3 is expected to enhance and improve the City's water delivery system and, once completed, allow for inspection and repair of City Tunnels No. 1 and 2 for the first time since they were put into service in 1917 and 1937, respectively. Begun in 1970, work is currently proceeding in Brooklyn and Queens and tunneling for the Lower Manhattan leg was initiated in 2003. Additionally, conceptual planning work for a new Kensico-City Tunnel (KCT) was completed in October 2003. The KCT will originate at Kensico Reservoir and connect to the distribution system in the Bronx. Once complete, this aqueduct will supplement the capacity of the three other aqueducts carrying water into the City from the upstate reservoirs.

## *Southeast Queens Groundwater Improvements/Aquifer Storage and Recovery*

In the early 1990s, DEP embarked upon a broad program to integrate New York City's surface water supply from the City's upstate reservoirs with the groundwater supplied by the aquifer system below southeastern Brooklyn and Queens. Historically, the Jamaica Water Supply Company (JWS), a privately operated water supply company, served the communities of southeast Queens. In 1996, New York City purchased JWS and took responsibility for the delivery of drinking water to the community.

After years of community concern over declining groundwater quality under JWS management, the City was charged with improving water quality in the region. After several years of evaluation and design, in 2003, DEP completed installation of granular activated carbon filters at nine wells that had been unused due to the presence of contaminants. After these improvements were completed, four of the wells were run into distribution for two weeks each. Additionally, to evaluate the expanded use of the groundwater supply, DEP constructed a pilot filtration plant to demonstrate several different methods of filtration that could be used to treat water being taken from the wells; results from the pilot plant are promising and design of the full-scale plant is expected to begin in 2004.

In addition to improving the supply of groundwater from Queens' aquifers through filtration, DEP is investigating the possibility of accessing an additional groundwater supply: the Lloyd Aquifer. Working with regional agencies, DEP is developing an Aquifer Storage and Recovery (ASR) project. Currently, the Lloyd Aquifer's resources are depleting, mainly due to a rate of consumption by Long Island communities, which is greater than the aquifer's natural rate of recharge. ASR would help to replenish the Lloyd Aquifer by injecting surplus water from New York City's upstate surface water reservoirs into the aquifer. This water would be stored in the aquifer and, when necessary, the City could extract a portion of this additional potable water to supplement its drinking water supply.

This process will benefit the City, as well as communities on Long Island. New York City will benefit from a new in-City drinking water supply – one created without many of the attendant construction costs and community disturbances involved in traditional capital projects, and, most importantly, one that allows us to have a temporary alternate water supply in case of an emergency, such as a drought or the need to shut down one of the City's three aqueducts. The injection process will have an added benefit in that it will recharge the aquifer. This recharging process would help to stabilize the Aquifer's salt front, protecting Long Island beach communities' underground drinking water from salinization, which is a long-term threat to their supply.

## *The Bluebelts of Staten Island*

The Staten Island Bluebelt system provides ecologically sound and cost-effective storm water management by

Staten Island Bluebelt Restoration And Beautification

preserving streams, ponds and other wetland areas and allowing them to perform their natural functions of conveying, storing and filtering storm water. A typical Bluebelt corridor includes man-made detention ponds, restored stream beds and constructed wetlands. This work is done with minimal disturbance to the natural environment and includes extensive restoration and beautification, including the planting of native species of trees, flowers and shrubs.

Bluebelt systems are currently under development in 16 watersheds on the South Shore of Staten Island. The existing Bluebelt corridors serve the storm water drainage needs of almost half of the borough and have already saved the City over $80 million in conventional sewer construction costs.

The extensive Bluebelt work on the South Shore will soon be joined by new developments in the mid-Island part of Staten Island. Mayor Michael Bloomberg announced the first step in that development in August 2003: the initiation of wetland property acquisition for the creation of the New Creek Bluebelt. The New Creek system will serve a 2,000 acre watershed, relieving flooding and restoring wetlands for the neighborhoods of Midland Beach, Dongan Hills, Grant City and Todt Hill.

### *Service Improvements Through Technology*

DEP is also committed to implementing emerging technologies to better operate, maintain and enhance the City's water and sewer systems. These new technologies enable us to provide cost-effective means to implement service improvements for the system's 8 million users. Two examples of this are the development of a Geographic Information System (GIS) mapping capability for both the water and sewer systems and the advancement of trenchless technology. GIS technology will allow for the mapping of the water distribution and sewer collection systems in a digital format, which can then be linked to the agency's work order system. When this project is complete, DEP will be able to track complaints graphically, improve the scheduling and productivity of work crews, and accelerate the planning of capital upgrade and expansion work. Trenchless technology is the application of epoxy or resin inside an existing water or sewer main. This process rehabilitates the main at a significantly reduced cost and enables DEP or DDC to perform repair work without extensive street trenching.

Water Quality Monitoring

Drinking Water Quality Control Distribution Laboratory - Organics

## Water Supply Protection

### *Regulation of Drinking Water*

In order to ensure that tap water is safe to drink, the New York State Department of Health (NYSDOH) and EPA prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Sources of drinking water worldwide (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.

Drinking water, including bottled water, may reasonably be 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 at (800) 426-4791.

## What People Are Saying About DEP

"As a member of Manhattan Community Board 8, I attended the Borough Consultations. I mentioned the ongoing concern in the East 60's about two malfunctioning storm drains. Imagine my surprise the next morning to see DEP investigating the problem and preparing to repair it. I would like to thank DEP for their dedication and prompt response."

*Judith E. Schneider,*
*Executive Vice President*
*East Sixties Neighborhood*
*Association, Inc., Manhattan.*

Drinking Water Quality Control Limnological Monitoring

### *Watershed Protection*

During 2003, New York City continued to implement its comprehensive watershed protection program, which began in 1997. This effort focuses on several key areas: land acquisition and management (includes $25 million in new fundings for land acquisition in the Croton system); improved security for water supply infrastructure; and partnership programs, such as Stream Management and the Watershed Agricultural Program, which address specific sources of pollution. DEP also conducted additional water quality research, continued to fund and oversee the upgrading of all non-City-owned wastewater treatment plants in the watershed and completed more projects in its watershed infrastructure rebuilding program. These initiatives have enabled the City to retain Filtration Avoidance status from the EPA for the Catskill/Delaware system. More information on this Program can be found on DEP's web site at www.nyc.gov/dep/watershed.

## Treatment Technologies

### *Catskill/Delaware UV Facility*

EPA is proposing to adopt new regulations in 2005, specifically the Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR), to improve control of microbial pathogens. In preparation for the new rule, New York City has begun design of an ultraviolet plant for the Catskill/Delaware system; when built, this plant will provide an additional barrier of microbiological protection by inactivating potentially harmful organisms such as *Cryptosporidium* or *Giardia*. This treatment will supplement DEP's existing microbial disinfection programs.

### What People Are Saying About DEP

"I have worked with DEP for several years on the Brooklyn Queens Aquifer Citizens Advisory Committee. DEP does a Herculean task of reaching out to the communities. DEP is responsive and is doing a tremendous job for New Yorkers."

*Manny Caughman of Queens.*

### *Croton Filtration Plant*

The City wishes to ensure that Croton system water is at all times protected against microbiological contamination, is aesthetically pleasing, and meets all drinking water quality standards. To that end and after careful study, the City has concluded that measures beyond watershed protection are necessary to address various water quality issues and help ensure that the Croton system remains a dependable source of safe drinking water. The City is therefore proceeding with the design and construction of a filtration plant for Croton system water, pursuant to the terms of a November 1998 federal court Consent Decree, entered into with the United States and the State of New York. The filtration facility is expected to reduce color levels in water from the Croton system, reduce the risk of microbiological contamination, reduce disinfection by-product levels, and ensure compliance with stricter water quality standards.

The Consent Decree, as modified in May 2002, requires the City to evaluate and choose between three potential sites for the filtration plant: two in the Bronx, at the Mosholu Golf Course or along the Harlem River in the vicinity of Fordham Road, and one at Eastview in Westchester County. The Final Supplemental Environmental Impact Statement reviewing these three sites will be released by June 30, 2004, at which time a preferred site for the facility will be announced. The plant is expected to be in operation by 2010 or 2011, depending on which site is selected for construction. Regardless of where the filtration plant is built, the City remains committed to maintaining a comprehensive watershed protection program for the Croton system.

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.*

### *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 1966 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 groundwater wells to prevent the precipitation of naturally occurring minerals, mostly iron and man-

ganese, in the distribution mains and customers' household piping. Air stripper facilities operate at several wells to remove volatile organic chemicals. And, as mentioned above, granular activated carbon filters were tested for two-week periods at four wells in Southeast Queens in 2003.

Drinking Water Quality Control Distribution Laboratory - Electron Microscopy

## Drinking Water Quality

DEP's water quality monitoring program - far more extensive than required by law - demonstrates that the quality of New York City's drinking water remains high and meets all health-related State and federal drinking water standards except for haloacetic acids (HAA5) in the Croton System. In May and December 2003, the Croton system violated the maximum contaminant level (MCL) for the group of disinfection by-products called haloacetic acids (HAA5) of 60 ug/L computed as an annual quarterly running average. Haloacetic acids are a group of chemicals that includes mono-, di- and trichloroacetic acids and mono- and dibromoacetic acids. Haloacetic acids are formed in drinking water during treatment by chlorine, which reacts with certain acids that are in naturally-occurring organic material (e.g., decomposing vegetation such as tree leaves, algae or other aquatic plants) in surface water sources such as rivers and lakes. The amount of haloacetic acids in drinking water can change from day to day, depending on the temperature, the amount of organic material in the water, the amount of chlorine added, and a variety of other factors. Drinking water is disinfected by public water suppliers to kill bacteria and viruses that could cause serious illnesses. Chlorine is the most commonly used disinfectant in New York State. For this reason, disinfection of drinking water by chlorination is beneficial to public health.

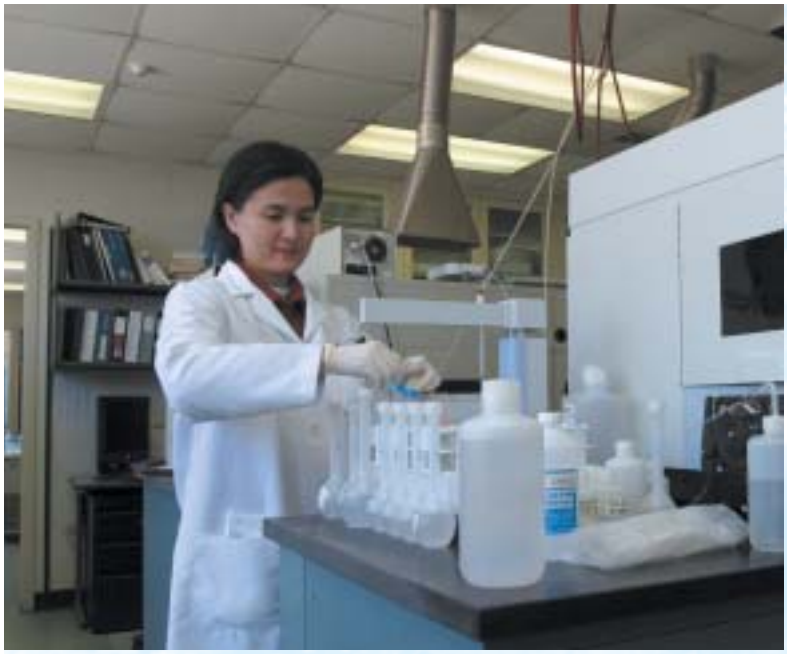
New York State requires the following statement: *Some studies of people who drank chlorinated drinking water for 20 to 30 years show that long term exposure to disinfection by-products (possibly including haloacetic acids) is associated with an increased risk for certain types of cancer. However, how long and how frequently people actually drank the water as well as how much haloacetic acids the water contained is not known for certain. Therefore, we do not know for sure if the observed increased risk for cancer is due to haloacetic acids, other disinfection by-products, or some other factors. The individual haloacetic acids dichloroacetic acid and trichloroacetic acid cause cancer in laboratory animals exposed to high levels over their lifetimes. Dichloroacetic acid and trichloroacetic acid are also known to cause other effects in laboratory animals after high levels of exposure, primarily on the liver, kidney and nervous system and on their ability to bear healthy offspring. Chemicals that cause effects in animals after high levels of exposure may pose a risk to humans exposed to similar or lower levels over long periods of time.*

### *Drinking Water Monitoring*

DEP's Bureau of Water Supply (BWS) is responsible for monitoring water quality throughout the distribution system, the upstate reservoirs and feeder streams, and the groundwater wells in Southeast Queens. Water quality is monitored continuously as the water enters the distribution system, and is tested regularly at sampling points throughout the entire City. DEP conducts analyses for a broad spectrum of microbiological, chemical, and physical measures of quality. In 2003, more than 36,900 samples were collected from the City's distribution system; approximately 415,500 analyses were performed on these samples.

DEP conducts most of its distribution water quality monitoring at approximately 1000 fixed sampling stations throughout the City. These stations, which you may have seen in your neighborhood, allow samples to be collected throughout the distribution system in an efficient and sanitary manner.


Drinking Water Sample Collection at Sampling Station



Drinking Water Quality Control Distribution Laboratory - Metals Analysis

## Test Results

The results of the tests conducted in 2003 on distribution water samples under the Distribution System Monitoring Program are summarized in the tables in this Report. These tables reflect the compliance monitoring results for all regulated and unregulated parameters. The tables present the federal and State standard for each parameter (if applicable), the number of samples collected, the range of values detected, the average of the values detected, and EPA's suggested possible sources of the parameters. The monitoring frequency of each parameter varies and is parameter specific. Data are presented separately for the Catskill/Delaware, Croton, and Groundwater Systems. Whether a particular user receives water from the Catskill/Delaware, Croton, or Groundwater supplies, or a mixture, depends on location, system operations, and consumer demand. Those parameters monitored but not detected in any sample are presented in a separate box.

The State requires monitoring for some parameters less than once per year because the concentrations of these parameters do not change frequently. Accordingly, some of these data, though representative, are more than one year old. In 2003, DEP conducted monitoring of certain parameters as required under the federal Unregulated Contaminants Monitoring Rule (UCMR). Those results are presented in a separate box. Unregulated parameter monitoring is a national program conducted to help EPA determine where certain parameters occur and whether it needs to regulate those parameters.

## What People Are Saying About DEP

"DEP personnel responded to our request to clear clogged catch basins in preparation for the Millennium celebrations, thus assuring that hundreds of thousands of guests would not have to wade through flooded or icy crosswalks during the Holiday Season. DEP civil servants of this caliber are the foundation of our great city and we want to acknowledge their contributions."

*Shari Doloboff, Senior Consultant*
*Times Square Business Improvement District, Manhattan.*

## Lead in Drinking Water

New York City water is virtually lead-free when it is delivered from the City's upstate reservoir system, but water can absorb lead from solder, fixtures, and pipes found in the plumbing of some buildings or homes. Mandated at-the-tap lead monitoring is conducted at a set number of households located throughout the City. Based on the results of this monitoring, in 2003, the 90th percentile did not exceed 15 µg/L. Therefore, New York City has met the established standard, or Lead Action Level (AL). The at-the-tap monitoring results are also presented in a separate table.

It is possible that lead levels in your home may be higher than other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested. To request a free kit to test for lead in your drinking water, call the City of New York's 24-hour Help-line at 311 or (212) NEW-YORK. Additional information is available from the EPA's Safe Drinking Water Hotline at (800) 426-4791.

## Monitoring for Cryptosporidium and Giardia

In 1992, the City started a comprehensive program to monitor its source waters and watersheds for the presence of *Cryptosporidium* and *Giardia*. Since then, samples have been collected weekly from the outflows of the Kensico and New Croton Reservoirs, before water is first chlorinated in the Catskill/Delaware and Croton Systems, respectively. Since 1992, DEP has modified its laboratory protocols twice to improve the Department's ability to detect both *Giardia* cysts and *Cryptosporidium* oocysts. These test methods, however, are limited in that they do not allow us to determine if organisms identified are dead or capable of causing disease.

Drinking Water Quality Control Distribution Laboratory - Microscopy

Drinking Water Quality Control Distribution Laboratory - Microbiology

In 2003, a total of 141 samples of Kensico Reservoir effluent and 59 samples of New Croton Reservoir effluent were collected and analyzed for *Giardia* cysts and *Cryptosporidium* oocysts using Method 1623 HV. Of the 141 Kensico Reservoir samples, 109 were positive for *Giardia* and 41 were positive for *Cryptosporidium*. Of the 59 New Croton Reservoir samples, 30 were positive for *Giardia* and 7 were positive for *Cryptosporidium*. DEP's *Giardia* and *Cryptosporidium* data from 1992 to the present, along with weekly updates, can be viewed on our web site at www.nyc.gov/dep/html/pathogen.html. As mentioned, detecting the presence of *Giardia* cysts and *Cryptosporidium* oocysts does not indicate whether these organisms are dead or potentially infectious.

While there is no evidence of illness related to the New York City water supply, federal and 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. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome both of these diseases within a few weeks. DEP's Waterborne Disease Risk Assessment Program conducts active surveillance for giardiasis and cryptosporidiosis to track the incidence of illness and determine all possible causes, including tap water consumption. No giardiasis or cryptosporidiosis outbreaks have been attributed to tap water consumption in New York City.

According to the EPA and the Centers for Disease Control and Prevention (CDC), it is unclear how most cases of cryptosporidiosis or giardiasis in the United States are contracted. The relative importance of various risk factors is unknown. Risk factors include eating contaminated food, swallowing contaminated recreational water while swimming or camping, contact with animals, contact with human waste, certain sexual practices, and drinking contaminated water. Individuals who think they may have cryptosporidiosis or giardiasis should contact their health care provider.

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 Crohn's disease or 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 providers about their drinking water.

EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium*, *Giardia* and other microbial contaminants are available from the EPA's Safe Drinking Water Hotline at (800) 426-4791.

## What People Are Saying About DEP

"In making inquiries about a construction project near my residence, DEP staff made me feel very confident that my inquiry was not insignificant and would do their best to provide me with some direction. I serve in a management capacity and realize that great customer service skills are essential to any business environment. It is my opinion that DEP went beyond the call to satisfy the need of a customer."

*Angela Mahon of Brooklyn.*

## Water Conservation

The average single family household in New York City uses approximately 100,000 gallons of water each year, at a cost of $1.52 per 100 cubic feet of water (748 gallons), or about $203.00 each year. New York City is fortunate to have reasonably priced drinking water; however, everyone should do their part to conserve this precious resource. All New Yorkers are encouraged to observe good water conservation habits, and are required to obey the City's year-round water use restrictions, which include a prohibition on watering sidewalks and lawns between November 1 and March 31, and on watering lawns and sidewalks from April 1 to October 31 between the hours of 11 AM and 7 PM. It is illegal to open fire hydrants at any time. Additionally, you can help save water by ordering a Home or Apartment Water Saving Kit by calling 311. If you are an apartment building owner/manager or a homeowner, you can obtain a free leak survey. Call DEP's Leak Survey contractor at (718) 326-9426 for information.

# New York City
# Drinking Water Quality Testing Results 2003

## *Detected 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 | |
| CONVENTIONAL PHYSICAL AND CHEMICAL PARAMETER | | | | | | | | | | | | |
| Alkalinity (mg/L $CaCO_3$) | - | | 305 | 8.3 - 55.6 | 12.5 | 36 | 35.4 - 59.2 | 51.3 | 138 | 15.3 - 179.2 | 72.9 | Erosion of natural deposits |
| Aluminum (µg/L) | 50 - 200 (1) | | 223 | ND - 35 | 14 | 37 | ND - 20 | 8 | 25 | ND - 15 | 5 | Erosion of natural deposits |
| Barium (mg/L) | 2 | 2 | 223 | 0.01 - 0.03 | 0.02 | 37 | 0.02 - 0.04 | 0.03 | 31 | 0.01 - 0.09 | 0.02 | Erosion of natural deposits |
| Calcium (mg/L) | - | | 293 | 5.0 - 13.3 | 6.4 | 37 | 17.1 - 27.4 | 24.5 | 144 | 6.4 - 72.6 | 29.9 | Erosion of natural deposits |
| Chloride (mg/L) | 250 | | 231 | 8 - 32 | 12 | 36 | 48 - 87 | 68 | 119 | 11 - 91 | 46 | Naturally occurring; road salt |
| Chlorine Residual, free (mg/L) | 4 (2) | | 10103 | 0.00 - 1.7 | 0.7 | 564 | 0.05 - 1.3 | 0.8 | 401 | 0.08 - 1.7 | 0.8 | Water additive for disinfection |
| Chromium (µg/L) | 100 | 100 | 223 | ND | ND | 37 | ND | ND | 31 | ND - 2 | < 2 | Discharge from steel and pulp mills; erosion of natural deposits |
| Color - distribution system (color units - apparent) | - | | 9008 | 3 - 60 | 6 | 318 | 5 - 15 | 8 | 402 | 2 - 350 | 6 | Presence of iron, manganese, and organics in water |
| Color - entry points (color units - apparent) | 15 (3) | | 1096 | 4 - 13 | 6 | 246 | 5 - 14 | 9 | 199 | 1 - 17 | 5 | Iron and manganese; or organic sources, such as algal growth |
| Copper (mg/L) | 1.3 (4) | 1.3 | 306 | 0.01 - 0.06 | 0.01 | 37 | 0.01 - 0.05 | 0.02 | 134 | 0.002 - 0.27 | 0.03 | Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives |
| Corrosivity (Langelier index) | 0 (1, 5) | | 223 | -3.0 to -1.2 | -2.5 | 36 | -1.5 to -0.9 | -1.2 | 49 | -2.5 to -0.1 | -1.1 | |
| Fluoride (mg/L) | 2.2 (3) | | 1451 | ND - 1.2 | 0.7 | 256 | ND - 1.0 | 0.2 | 394 | 0.1 - 1.7 | 1.0 | Erosion of natural deposits; water additive which promotes strong teeth; runoff from fertilizer |
| Hardness (mg/L $CaCO_3$) | - | | 232 | 17 - 50 | 22 | 37 | 65 - 105 | 95 | 139 | 22 - 321 | 132 | Erosion of natural deposits |
| Hardness (grains/gallon[US]$CaCO_3$) (6) | - | | 232 | 1.0 - 2.9 | 1.3 | 37 | 3.8 - 6.1 | 5.5 | 139 | 1.3 - 18.5 | 7.6 | Erosion of natural deposits |
| Iron (µg/L) | 300 (7) | | 232 | 20 - 160 | 30 | 37 | 30 - 110 | 70 | 123 | ND - 860 | 240 | Naturally occurring |
| Lead (µg/L) | 15 (4) | 0 | 306 | ND - 3 | 0.6 | 37 | ND - 5 | 0.6 | 136 | ND - 8 | 0.7 | Corrosion of household plumbing systems; erosion of natural deposits |
| Magnesium (mg/L) | - | | 232 | 1.1 - 4.0 | 1.5 | 37 | 5.4 - 9.1 | 8.1 | 141 | 1.5 - 36.0 | 14 | Erosion of natural deposits |
| Manganese (µg/L) | 300 (7) | | 232 | 9 - 68 | 20 | 37 | 18 - 47 | 32 | 123 | ND - 154 | 43 | Naturally occurring |
| Nickel (µg/L) | - | | 223 | ND | ND | 37 | ND | ND | 31 | ND - 4 | ND* | Erosion of natural deposits |
| Nitrate (mg/L nitrogen) | 10 | 10 | 231 | 0.10 - 0.88 | 0.19 | 36 | 0.28 - 0.73 | 0.46 | 119 | 0.23 - 8.46 | 3.05 | Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits |
| Nitrite (mg/L nitrogen) | 1 | 1 | 223 | ND - 0.012 | 0.002 | 36 | 0.001 - 0.007 | 0.002 | 53 | ND - 0.006 | 0.001 | Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits |
| pH (pH units) (8) | 6.5 - 8.5 (1) | | 10104 | 6.6 - 7.9 | 7.2 | 564 | 7.1 - 7.4 | 7.2 | 402 | 6 - 8.1 (9) | 7.2 | |
| Phosphate, Ortho- (mg/L) | - | | 10103 | 0.2 - 3.3 | 2.1 | 564 | 1.2 - 3.3 | 2.1 | 401 | 0.4 - 2.7 | 1.7 | Water additive for corrosion control |
| Phosphate, Total (mg/L) | - | | 0 | - | - | 0 | - | - | 24 | 0.5 - 5.7 | 4.3 | Water additive for corrosion control |
| Potassium (mg/L) | - | | 223 | 0.4 - 1.3 | 0.6 | 37 | 1.6 - 2.6 | 2.3 | 25 | 0.6 - 2.2 | 1.3 | Erosion of natural deposits |
| Selenium (µg/L) | 50 | 50 | 223 | ND | ND | 37 | ND | ND | 31 | ND - 2 | ND* | Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines |
| Silica [silicon oxide] (mg/L) | - | | 231 | 1.5 - 4.5 | 2.4 | 36 | 3.0 - 6.0 | 4.6 | 93 | 2.7 - 22.9 | 14.5 | Erosion of natural deposits |
| Sodium (mg/L) | NDL (10) | | 223 | 6 - 16 | 9 | 37 | 24 - 41 | 33 | 53 | 7 - 50 | 29 | Naturally occurring; road salt; water softeners; animal waste |
| Specific Conductance (µmho/cm) | - | | 10104 | 68 - 204 | 89 | 564 | 213 - 445 | 362 | 402 | 141 - 739 | 352 | |
| Strontium (µg/L) | - | | 223 | 20 - 40 | 20 | 37 | 50 - 90 | 80 | 25 | 20 - 130 | 60 | Erosion of natural deposits |
| Sulfate (mg/L) | 250 | | 231 | 1.7 - 10.6 | 7.2 | 36 | 10.3 - 14.8 | 13 | 119 | 8.1 - 86.4 | 41.4 | Naturally occurring |
| Temperature (°F) | - | | 10104 | 34 - 80 | 53 | 564 | 35 - 68 | 51 | 401 | 39 - 77 | 58 | |
| Total Dissolved Solids (mg/L) | 500 (1) | | 223 | 33 - 111 | 53 | 36 | 140 - 256 | 202 | 53 | 55 - 477 | 239 | Metals and salts naturally occurring in the soil; organic matter |
| Total Organic Carbon (mg/L carbon) | - | | 223 | 1.1 - 2.1 | 1.5 | 66 | 2 .0- 8.8 | 2.7 | 24 | ND - 1.7 | 0.7 | Organic matter naturally present in the environment |
| Turbidity (11) - distribution system (NTU) | 5 (12) | | 9008 | 0.7 - 1.0 | 0.9 | 318 | 0.8 - 1.1 | 0.9 | 402 | 0.4 - 2.8 | 0.8 | Soil runoff |
| Turbidity (11) - entry points (NTU) | 1 (13) | | - | - | - | 246 | | 1.0 | - | - | - | Soil runoff |
| UV 254 Absorbency ($cm^{-1}$) | - | | 223 | 0.023 - 0.055 | 0.032 | 70 | 0.043 - 0.073 | 0.055 | 25 | 0.008 - 0.032 | 0.020 | Organic matter naturally present in the environment |
| Zinc (mg/L) | 5 | | 232 | ND - 0.010 | 0.002 | 37 | ND - 0.004 | 0.001 | 123 | ND - 0.444 | 0.124 | Naturally occurring |
| MICROBIAL PARAMETERS | | | | | | | | | | | | |
| Total Coliform Bacteria (% of samples positive/month) | 5% | 0 | 10093 | ND - 0.9% | 0.3% | 565 | ND | ND | 407 | ND - 2.3% | 0.3% | Naturally present in the environment |
| *E. coli* (CFU/100mL) | (14) | 0 | 10093 | ND - 3 | | 565 | ND | | 407 | ND | | Human and animal fecal waste |
| Heterotrophic Plate Count (CFU/mL) | TT | - | 3627 | ND - 73 | ND | 142 | ND - 998 | 7 | 151 | ND - 15 | ND | Naturally present in the environment |

| LEAD AND COPPER RULE SAMPLING AT RESIDENTIAL WATER TAPS: January - June 2003 | | | | | | | |
|---|---|---|---|---|---|---|---|
| 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 | 0.01 - 0.33 | 0.26 | 0 | Corrosion of household plumbing systems |
| Lead (µg/L) | 15 | 0 | 107 | ND - 51 | 11 | 8 | Corrosion of household plumbing systems |

# Detected Parameters *(continued)*

| 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 | |
| ORGANIC CONTAMINANTS | | | | | | | | | | | | |
| Disinfection By-Products detected: | | | | | | | | | | | | |
| Bromochloroacetic Acid (µg/L) | 50 | | 224 | ND - 3 | 2 | 67 | ND - 5 | 2 | 13 | ND - 2 | 1 | By-product of drinking water chlorination |
| Chloral Hydrate (µg/L) | 50 | | 16 | 1.5 - 10.0 | 5.7 | 2 | 7.5 - 8.8 | 8.1 | - | - | - | By-product of drinking water chlorination |
| Chloropicrin (µg/L) | 50 | | 16 | 0.3 - 0.9 | 0.5 | 34 | ND - 0.9 | 0.2 | - | - | - | By-product of drinking water chlorination |
| Haloacetic Acid 5 (HAA5) (µg/L) | 60 [15] | | 224 | 18 - 75 | 45 | 67 | 24 - 84 | 65 | 13 | ND - 57 | 16 | By-product of drinking water chlorination |
| Haloacetonitriles (HANs) (µg/L) | 50 | | 16 | 1.5 - 8 | 3 | 34 | 1.4 - 7.4 | 4.8 | - | - | - | By-product of drinking water chlorination |
| Halogenated Ketones (HKs) (µg/L) | 50 | | 16 | 2.1 - 9.6 | 3.4 | 33 | 3.5 - 5.1 | 4.4 | - | - | - | By-product of drinking water chlorination |
| Total Organic Halogen (µg/L) | - | | 223 | 61 - 299 | 147 | 42 | 163 - 366 | 237 | 25 | ND - 167 | 51 | By-product of drinking water chlorination |
| Total Trihalomethanes (µg/L) | 80 [15] | | 222 | 10 - 56 | 34 | 51 | 27 - 82 | 56 | 83 | ND - 41 | 18 | By-product of drinking water chlorination |
| Principal Organic Contaminants detected: | | | | | | | | | | | | |
| Bromomethane (µg/L) | 5 | | 222 | ND | ND | 51 | ND | ND | 83 | ND - 0.9 | ND* | 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 |
| Carbon Tetrachloride (µg/L) | 5 | 0 | 222 | ND | ND | 51 | ND | ND | 83 | ND - 0.5 | < 0.5 | Discharge from chemical plants and other industrial activities |
| Dichlorodifluoromethane (µg/L) | 5 | | 222 | ND | ND | 51 | ND | ND | 83 | ND - 2.3 | 0.6 | Refrigerant; aerosol propellant; foaming agent |
| Tetrachloroethylene (µg/L) | 5 [16] | 0 | 222 | ND - 0.7 | ND* | 51 | ND | ND | 83 | ND - 17.3 | 0.9 | Discharge from dry cleaners |
| 1,2,4-Trichlorobenzene (µg/L) | 5 | 70 | 222 | ND | ND | 51 | ND - 0.8 | ND* | 83 | ND | ND | Discharge from textile finishing factories |
| Trichloroethene (µg/L) | 5 | 0 | 222 | ND | ND | 51 | ND | ND | 83 | ND - 1.2 | < 0.5 | Residual of cleaning solvents and metal degreasers |
| Specified Organic Contaminants detected: | | | | | | | | | | | | |
| Dalapon (µg/L) | 50 | | 3 | ND - 1.2 | ND* | 1 | 1.9 | 1.9 | 6 | ND | ND | Runoff from herbicide used on rights of way |
| 1,2-Dibromo-3-chloropropane (µg/L) | 0.2 | 0 | 16 | ND - 0.06 | < 0.02 | 2 | ND | ND | - | - | - | Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards |
| Unspecified Organic Chemicals detected: | | | | | | | | | | | | |
| Methyl tert-butyl ether (MTBE) (µg/L) | 50 | | 215 | ND | ND | 51 | ND | ND | 82 | ND - 1 | < 0.5 | Additive to gasoline in the water |
| Phenanthrene (µg/L) | 50 | | 3 | ND - 0.02 | 0.02 | 1 | ND | ND | 6 | ND | ND | Release of this compound most likely results from the incomplete combustion of a variety of organic compound including wood and fossil fuels. This compound is also used in dyestuffs, explosives, medical synthesis, and biomedial studies. |

# Undetected Parameters

| |
|---|
| UNDETECTED CONVENTIONAL PHYSICAL AND CHEMICAL PARAMETERS |
| Antimony, Arsenic, Asbestos [17] , Beryllium, Bromide, Cadmium, Chlorate, Cyanide, Foaming Agents, Gross Alpha Particle, Lithium, Mercury, Silver, 90Strontium - radiological, Thallium, Tritium ($^3$H) - radiological |
| UNDETECTED ORGANIC CONTAMINANTS |
| Principal Organic Contaminants not detected: |
| Benzene, Bromobenzene, Bromochloromethane, n-Butylbenzene, sec-Butylbenzene, tert-Butylbenzene, Chlorobenzene, Chloroethane, Chloromethane, 2-Chlorotoluene, 4-Chlorotoluene, Dibromomethane, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,1-Dichloroethane, 1,2-Dichloroethane, 1,1-Dichloroethene, cis-1,2-Dichloroethylene, trans-1,2-Dichloroethylene, 1,2-Dichloropropane, 1,3-Dichloropropane, 2,2-Dichloropropane, 1,1-Dichloropropene, cis-1,3-Dichloropropene, trans-1,3-Dichloropropene, Ethylbenzene, Hexachlorobutadiene, Isopropylbenzene, p-Isopropyltoluene, Methylene chloride, n-Propylbenzene, Styrene, 1,1,1,2-Tetrachloroethane, 1,1,2,2-Tetrachloroethane, Toluene, 1,2,3-Trichlorobenzene, 1,1,1-Trichloroethane, 1,1,2-Trichloroethane, Trichlorofluoromethane, 1,2,3-Trichloropropane, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, m-Xylene, o-Xylene, p-Xylene |
| Specified Organic Contaminants not detected: |
| Alachlor, Aldicarb (Temik), Aldicarb sulfone, Aldicarb sulfoxide, Aldrin, Atrazine, Benzo(a)pyrene, Butachlor, Carbaryl, Carbofuran (Furadan), Chlordane, 2,4-D, Dicamba, Dieldrin, Di(2-ethylhexyl)adipate, Di(2-ethylhexyl) phthalate, Dinoseb, Diquat, Endothall, Endrin, Ethylene dibromide (EDB), Glyphosate, Heptachlor, Heptachlor epoxide, Hexachlorobenzene, Hexachlorocyclopentadiene, 3-Hydroxycarbofuran, Lindane, Methomyl, Methoxychlor, Metolachlor, Metribuzin, Oxamyl (Vydate), Pentachlorophenol, Picloram, Polychlorobiphenyls [PCBs], Propachlor, Simazine, Toxaphene, 2,4,5-TP (Silvex), 2,3,7,8-TCDD (Dioxin), Vinyl chloride |
| Unspecified Organic Chemicals not detected: |
| Acenaphthene, Acenaphthylene, Acetochlor, Acetone, Acifluorfen, tert-Amyl methyl ether, Anthracene, Bentazon, Benzo[a]anthracene, Benzo[b]fluoranthene, Benzo[k]fluoranthene, Benzo[g,h,I]perylene, a-BHC, b-BHC, d-BHC, Bromacil, 2-Butanone (MEK), Butylbenzylphthalate, tert-butyl ethyl ether, Caffeine, a-Chlordane, g-Chlordane, Chlorobenzilate, Chloroneb, Chlorothalonil (Draconil, Bravo), Chlorpyrifos (Dursban), Chrysene, 2,4-DB, p,p'DDD, p,p'DDT, Dibenz[a,h]anthracene, Di-n-Butylphthalate, 3,5-Dichlorobenzoic acid, Dichlorprop, Dichlorvos (DDVP), Diethylphthalate, Diisopropyl ether, Dimethoate, Dimethylphthalate, Di-N-octylphthalate, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin aldehyde, Fluoranthene, Fluorene, Indeno[1,2,3-cd] pyrene, Isophorone, Malathion, Methiocarb, 4-Methyl-2-pentanone (MIBK), Naphthalene, 4-Nitrophenol, trans-Nonachlor, Paraquat, Parathion, Permethrin, Prometryn, Propoxur (Baygon), Pyrene, 2,4,5-T, Thiobencarb, Trichlorotrifluoroethane (freon), Trifluralin |
| UNREGULATED CONTAMINANTS MONITORING RULE (UCMR) PARAMETERS - not detected |
| Acetochlor, p,p'DDE, Diazinon, 2,6-Dinitrotoluene, 1,2-Diphenylhydrazine, Disulfoton, EPTC, Fonofos, Molinate, Nitrobenzene, Prometon, Terbacil, Terbufos |

## Footnotes

(1) USEPA Secondary MCL; NYSDOH has not set an MCL for this parameter.

(2) Value represents MRDL which is a level of disinfectant added for water treatment that may not be exceeded at the consumer's tap without an unacceptable possibility of adverse health effects. The MRDL is enforceable in the same manner as an MCL.

(3) Determination of MCL violation: If a sample exceeds the MCL, a second sample must be collected from the same location within 2 weeks. If the average of the two results exceeds the MCL, then an MCL violation has occurred. No violations occurred in 2003.

(4) Action Level (not an MCL) measured at the tap. The data presented in this table were collected from sampling stations at the street curb. For at the tap monitoring, see the following table.

(5) A Langelier Index of less than zero indicates corrosive tendencies.

(6) Hardness of up to 3 grains per gallon is considered soft water; between 3 and 9 is moderately hard water.

(7) If iron and manganese are present, the total concentration of both should not exceed 500 µg/L. Values in the groundwater system above the MCL are not a violation because the water at particular wells is treated, as allowed by the State, to meet aesthetic concerns.

(8) The average for pH is the median value.

(9) Low pH values occurred when four wells were turned on for two week periods to test activated carbon filters.

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

(11) Turbidity is a measure of cloudiness of the water. Turbidity is monitored because it is a good indicator of water quality and can hinder the effectiveness of disinfection.

(12) This MCL for turbidity is the monthly average rounded off to the nearest whole number. Data presented are the range and average of monthly averages.

(13) This MCL only applies to the Croton System. The value presented is the highest monthly average for 2003.

(14) If a sample and its repeat sample are both positive for coliform bacteria and one of the two samples is positive for E. coli, then an MCL violation has occurred.

(15) US EPA MCLs for HAA5 and TTHMs are the calculated quarterly running average. Data presented are the range of individual sampling results and the highest running quarterly average.

(16) Determination of MCL violation: If a sample exceeds the MCL, 1 to 3 more samples must be collected from the same location within 30 days. If at least one confirming sample is positive and the average of all samples exceeds the MCL, then an MCL violation has occurred. No violation occurred in 2003.

(17) NYSDOH has issued a waiver for asbestos monitoring in the Groundwater System since no asbestos cement pipes are used anywhere in the distribution system.

* The contaminant was detected in only one sample. The level found was below the MCL.

Highlighted and **bolded** value indicates a violation occurred.

## 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

# Frequently Asked Questions

*Q: Does my drinking water contain fluoride?*

A: 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 1965.

*Q: Is New York City's water "hard"?*

A: 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."

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

A: 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 (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.

*Q: Should I buy bottled water?*

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

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

A: 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.

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

A: 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.

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

A: 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.

## What People Are Saying About DEP

"I would like to commend the DEP field crew that isolated and repaired the service water main in such a short time. All homes were checked by DEP for water in basements. The main was purged and full service was restored for late evening washing and bathing. The DEP repair crew couldn't have been more polite and careful about property and the well being of the homeowners."

*Michael Morrelli, President*
*Westerleigh Improvement Society, Inc., Staten Island*

## What People Are Saying About DEP

"71% of the Zagat respondents say they prefer tap water when eating 'at a fine dining restaurant.'"

*Zagat 2004 New York City Restaurant Survey.*

## 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 311 or from outside NYC call 212-New-York. TTY services are available by calling (212) 504-4115.

For more information on *Cryptosporidium* and *Giardia*, please contact the Parasitic Disease Surveillance Unit of the New York City DEP and New York City Department of Health and Mental Hygiene (DOHMH) at: (212) 788-4728 or dial 311.

To contact DOHMH about other water supply health related questions call 311 or call the New York State Department of Health Bureau of Public Water Supply Protection at (212) 268-7055.

To report any pollution, crime or terrorism activity occurring both in-City and in the watershed, call 1-888-H2O-SHED (426-7433). To view this 2003 Statement, announcements of public hearings, or other information, visit DEP's Web site at:

www.nyc.gov/dep

**Este reporte contiene información muy importante sobre el agua que usted toma. Haga que se la traduzcan o hable con alguien que la entienda.**

**Ce rapport contient des informations importantes sur votre eau potable. Traduisez-le ou parlez en avec quelqu'un qui le comprend bien.**

**Rapò sa a gen enfòmasyon ki enpòtan anpil sou dlo w'ap bwè a. Fè tradwi-l pou ou, oswa pale ak yon moun ki konprann sa ki ekri ladan-l.**

Ten raport zawiera bardzo istotną informacje o twojej wodzie pitnej. Przetłumacz go albo porozmawiaj z kimś kto go rozumie.

В этом материале содержится важная информация относительно вашей питьевой воды. Переведите его или поговорите с кем-нибудь из тех, кто понимает его содержание.

這個報告中包含有關你的飲用水的重要信息。
請將此報告翻譯成你的語言，或者詢問懂得這份報告的人。

이 보고서는 귀하의 식수에 관한 매우 중요한 정보를 포함하고 있습니다. 이 정보에 대해 이해하는 사람에게 그 정보를 번역하거나 통역해 받으십시오.

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Department of Environmental Protection
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Flushing, New York 11373-5108