District of Columbia
Water and Sewer Authority

On tap—water is life.




2005 DRINKING WATER QUALITY REPORT

Dear Consumer:

The District of Columbia Water and Sewer Authority (WASA) is pleased to provide you this Annual Water Quality Report with information about your drinking water – where it comes from, what's in it, and how it's treated and distributed. The Report also contains required public notifications.

We distribute a product that is essential for life. WASA is committed to providing the highest quality drinking water by first ensuring that the water we deliver meets or surpasses federal Safe Drinking Water Act standards, and secondly by providing the most reliable service we can.

WASA has focused a significant amount of attention on addressing District drinking water quality, for example, the issues raised by elevated lead levels in the tap water samples of some homes. Federal regulations require that drinking water corrosion treatment processes minimize lead and copper concentrations at the tap. The Washington Aqueduct's change in its water treatment chemistry has resulted in a significant and measurable drop in lead levels since August 2004 – a positive trend that has continued. In fact, in 2005 the District's drinking water did not exceed the lead action level under federal regulations, which indicates that the change in water chemistry is having positive results.

We are fulfilling the promises made in our Community Water Pledge to go beyond federal regulations to ensure clean and high quality drinking water. WASA is spending more than $400 million to replace the public portion of all known lead service lines leading from the main in the street to the home with copper pipe.

Even more important, WASA continues to enhance its effort to maintain the distribution system by focusing on water quality and system reliability. Over $250 million is being invested in the 1,300-mile distribution system with new mains, valves, hydrants and other equipment. In addition to EPA compliance monitoring, WASA monitors water quality at key locations throughout the District and samples are collected and analyzed on a daily basis. WASA also performs routine and special main flushing based on water quality parameters to ensure that the water distributed to consumers is of the highest quality.

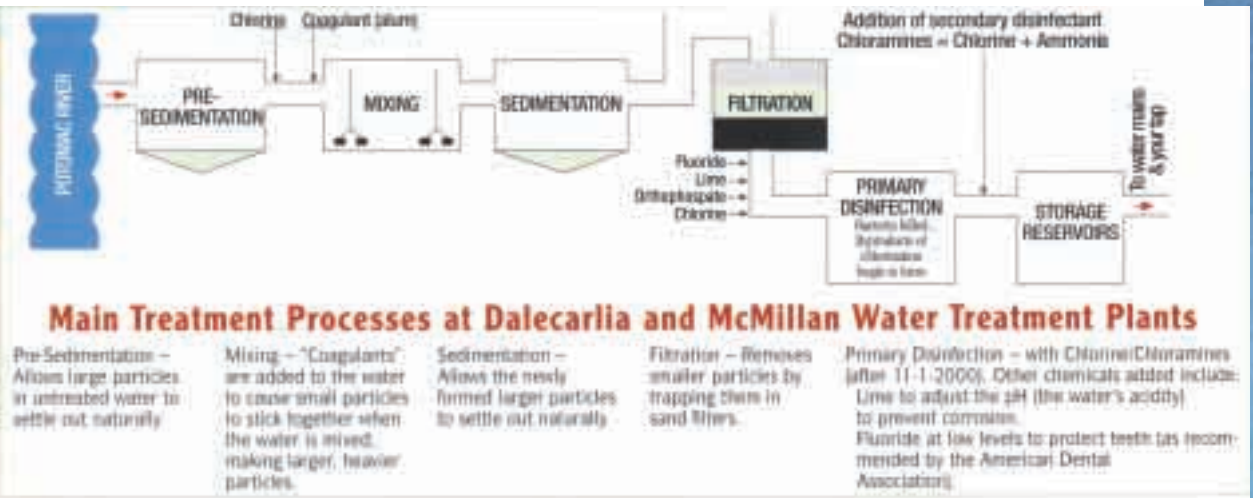
We are responsible for providing an essential service for residents, businesses and visitors in the District, and the quality of the product continues to be our number one priority.

I am confident that you will find the 2005 Water Quality Report informative.

Jerry N. Johnson, *General Manager*
District of Columbia Water and Sewer Authority

Our Water Treatment and Distribution System

The DC Water and Sewer Authority (WASA) distributes water to residences and businesses throughout the District for drinking, fire fighting and other uses. WASA purchases the drinking water from the US Army Corps of Engineers, Washington Aqueduct. The Washington Aqueduct (WA) withdraws approximately 180 million gallons of water each day from the Potomac River at the Great Falls and the Little Falls intakes, and then treats the water at the two water treatment plants, Dalecarlia and



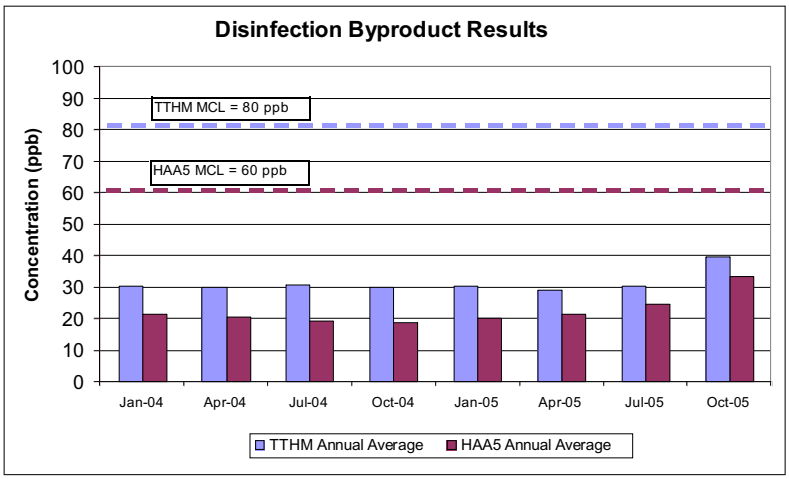
McMillan (see the water treatment diagram above). The key treatment processes at the Dalecarlia and McMillan facilities include sedimentation, filtration, fluoridation, pH adjustment, primary disinfection using free chlorine, secondary disinfection with chloramines through the addition of ammonia to convert the chlorine to chloramine, and finally corrosion control with orthophosphate. This orthophosphate treatment process began system-wide in August 2004 to reduce the tendency of the metal in the pipe to corrode. The effectiveness of the treatment was confirmed by test results of tap water samples in 2005 that were at or below the U.S. Environmental Protection Agency (EPA) lead action level.

Chloramine As Our Water Disinfectant

As of November 1, 2000, chloramine, added by the Washington Aqueduct, is being used as a disinfectant to maintain protection against microbial (bacteria or viruses) contamination in the water distribution system. The change in disinfectant from chlorine to chloramine is an effort to reduce the concentrations of "disinfectant byproducts" called trihalomethanes (THMs) and haloacetic acids (HAAs). This change was an effective response to more stringent national standards established by the EPA. Chronic exposure to high concentrations of these disinfection byproducts is considered potentially carcinogenic (cancer-causing). Since the treatment change to chloramine, there has been a significant reduction of THMs and HAAs in the drinking water. WASA continues to advise facilities providing kidney dialysis treatment, individuals and businesses maintaining fish tanks, and laboratories and businesses affected by chloraminated water that their pretreatment steps must remove chloramine. Chloramine fact sheets are available upon request by calling our Water Quality Office at 202-612-3440.

The Potomac River – Our Water Supply Source

Drinking water for the District of Columbia comes from the Potomac River, a "surface water" supply. As water travels over land and rocks, through creeks, and into the Potomac River, it dissolves naturally occurring minerals, leaves and vegetation, and sometimes even radioactive materials. It may also dissolve animal waste, pesticides, and other debris. Rain or other precipitation may also pick up contaminants as it falls through the atmosphere and into the river.



MCL = **Maximum Contaminant Level** – see definitions on page 15

Contaminants that may be present in source water (before treatment) include:

- Microorganisms, such as viruses and bacteria that come from agricultural livestock operations, septic systems, wastewater treatment plants and wildlife
- Inorganic chemicals, such as salts and metals that can be naturally occurring or result from urban stormwater runoff, farming, and industrial or domestic wastewater discharges
- Pesticides and herbicides that may come from agriculture, urban stormwater runoff, and residential uses
- Organic chemicals, including synthetic and volatile organic chemicals which are by-products of industrial processes, petroleum products from gas stations and urban stormwater runoff and septic systems
- Radioactive chemicals that can be naturally occurring or the result of mining activities

The Interstate Commission on the Potomac River Basin conducted a Source Water Assessment of the Potomac River watershed, upstream of the water supply intakes for the District, in April 2002. The assessment included the delineation of the District of Columbia source water area, the identification of potential contamination sources, a susceptibility analysis for the intakes, and modeling of contaminant transport within the river system. The key findings of this study were that the most likely sources of potential contamination to the water supply are urban runoff, toxic spills, agricultural activities and inadequate wastewater treatment. For more information on this project, contact the Interstate Commission on the Potomac River Basin at 301-984-1908 or visit the web site at **http://www.potomacriver.org/water_quality/dc.htm**

Protecting The District Drinking Water Supply

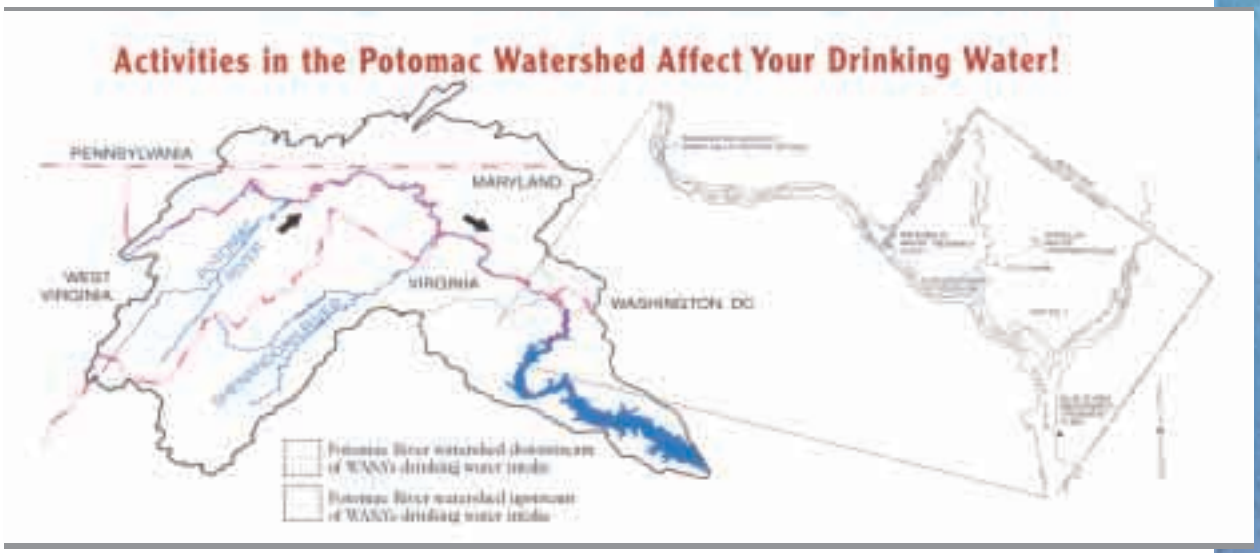
Protect The Watershed — A watershed is an area of land surrounding a river from which water eventually drains into the river. Everyone can help protect the Potomac River from contamination by protecting its watershed:

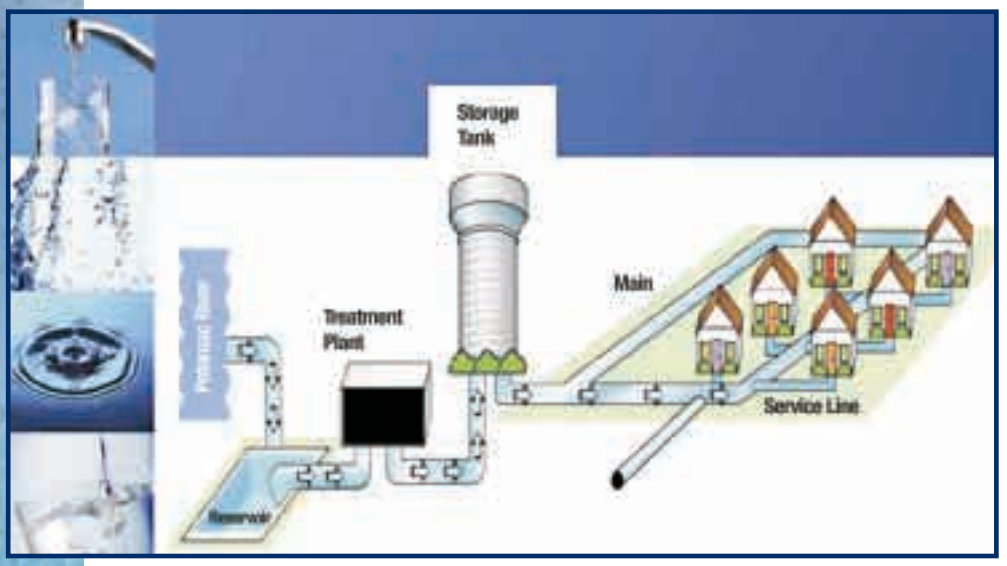
- Dispose of household wastes and motor oil in a proper manner. You can call the District Recycle Hotline at 202-645-8245 for information regarding proper disposal.
- Never dump anything down a storm drain or catch basin.
- Participate in watershed protection activities by contacting the Interstate Commission on the Potomac River Basin at 301-984-1908.
- To report a spill impacting the river, contact the District of Columbia Mayor's Command Center at 202-727-6161.

Report Fire Hydrant Vandalism — Fire hydrants are used primarily to supply water for fire protection. WASA also issues permits for other specific hydrant uses, with mandatory requirements for the use of a special backflow prevention device when a permit-holder draws water from a hydrant. Unauthorized opening of fire hydrants or causing damage to fire hydrants is a crime punishable by fines and imprisonment. Opening fire hydrants drains thousands of gallons of fresh drinking water into streets. The torrent of water is a safety hazard to traffic and pedestrians and damages roads. In addition, improper use of fire hydrants can increase the flow, causing mineral sediment in the water mains to come loose, resulting in discoloration and potential water quality problems in the neighborhoods around the hydrant. Most importantly, unauthorized hydrant use without a backflow prevention device can result in the introduction of contaminants into the system. Anyone seeing someone opening a fire hydrant without authorization should call WASA's Emergency Center at 202-612-3400 immediately.

Conserve Water – Because water is a limited resource, WASA continues to advocate water conservation activities. There are many ways to save water, and they all start with you, the WASA customer. To show our customers how to save water, WASA has adopted the Water, Use It Wisely campaign together with other local water utilities and governments in the Metropolitan Washington region. Log on to **www.wateruseitwisely.com** or **www.dcwasa.com** to access water saving tips and information.

Changing behavior and installing water -efficient fixtures are among the most effective means of conserving water. The *Water, Use It Wisely* website has





an inventory of 100 ways you can save water by making simple changes to your daily routine. You will also learn how much water implementing each suggestion can save. For example, running your washing machine and dishwasher only when they are full could save you 1,000 gallons a month. The *Water, Use It Wisely* website also provides information on plumbing fixture changes. Changing a toilet or a showerhead to a low-volume water fixture is a great way to reduce water consumption. A low-flush toilet could save up 22,000 gallons a year for a family of four. You can save money and potentially add value to your property with water conservative plumbing fixtures. Please visit the local *Water, Use it Wisely* website at **www.mwcog.org/wisewater** to find about water conservation activities and events in the D.C. area.

Get Involved – Attend any of the **community meetings** WASA periodically conducts with Advisory Neighborhood Commissions (ANCs), civic associations, schools, libraries, and other groups. And, if you would like a speaker from WASA to make a presentation to your community group of ten or more, contact the WASA Public Affairs Office at 202-787-2200, or email us at **info@dcwasa.com**. The **WASA Board of Directors** conducts regular business meetings that are open to the public, generally on the first Thursday of each month, 9:30 AM at the Blue Plains Facility, 5000 Overlook Ave, SW, Washington, DC 20032. If you would like to attend and learn more about agency issues, please call the Office of the Board Secretary at 202-787-2330 to confirm the specific meeting time and location.

Lead in the Drinking Water

WASA has given priority to addressing District drinking water issues that were raised by elevated (above the EPA action level) lead levels in a number of tap water samples beginning in 2001. In 2004, WASA agreed to the provisions of an EPA Administrative Order (AO), which included a list of actions for WASA to undertake beyond those required by the federal Lead and Copper Rule (LCR). In addition, WASA issued a *Community Water Pledge*, promising to aggressively address the lead issue and keep the public updated on progress.

Drinking water for the District is virtually lead-free when it is delivered from our supplier, the Army Corps of Engineers Washington Aqueduct. However, water can have a corrosive effect on pipes and internal plumbing containing lead.

In November 2000, the Washington Aqueduct began using chloramines, rather than chlorine, for disinfecting drinking water. Consistent with EPA goals, this change reduced the levels of disinfection by-products and the public health risks associated with them (see *Chloramine As Our Water Disinfectant, page 5*).

A technical expert working group theorized that this change in the water chemistry increased the rate at which lead leached into the drinking water. Orthophosphate then was added to the District's water in 2004 to control lead leaching. Orthophosphate works by building a thin protective coating inside pipes and plumbing fixtures to prevent water from corroding pipes, which causes metals to leach into the water.

The addition of orthophosphate reduced lead levels within months. In 2005, lead levels in District drinking water declined overall to meet EPA's lead action level of at or below 15 parts per billion (15 ppb) for two consecutive six-month monitoring periods. The latest results in 2006 show that lead levels continue to decrease even further below the EPA action level.

Although the steps WASA and its supplier, the Washington Aqueduct, took to reduce the lead levels were successful and 2005 monitoring results fell within the EPA action level, WASA continues to honor its commitment to replace the public portion of all known public lead service lines in the District.

Health Effects of Lead

Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested. Also, flushing your tap for one to two minutes before using the water will help to decrease exposure to lead in drinking water.

Additional information about lead is available from the EPA Safe Drinking Water Hotline at 1-800-426-4791 or at **www.epa.gov/safewater/lead**.

Lead Service Line Replacement

The EPA Administrative Order (AO) required WASA to replace at least seven (7) percent of lead service lines in its distribution system until District drinking water is no longer above the lead action level for two consecutive six-month sampling periods. The AO also required WASA to replace approximately 2000 additional lead service lines in the distribution system (387 by September 30, 2006 and 1615 by September 30, 2007). During fiscal year 2005 (October 1, 2004 through September 30, 2005), WASA replaced the public portion of 4,137 lead service lines, exceeding the federal requirement of at least seven percent and completed the additional 2002 lead service line replacements required by the AO. WASA will continue replacing lead service lines and will contact customers before beginning lead service line replacement work in their neighborhood. **WASA encourages residents with lead service lines to consider replacing the lead piping on their property at the same time.** To pay for service line and indoor plumbing replacement on the private side of the property line, financial assistance is available to income-eligible homeowners through low-interest loans or grants from the District Department of Housing and Community Development. Contact the WASA Lead Services Hotline at 202 -787-2732 for more information.

To find out if your home has a lead service line, contact the WASA Lead Services Hotline by calling at 202-787-2732 or e-mailing **waterquality@dcwasa.com**.

Lead Testing

If you have a lead service line and would like your water tested for lead, please contact us at 202-787-2732 or e-mail us at **waterquality@dcwasa.com**.

Water Quality Enhancement Program

The quality of drinking water is affected as it flows through the distribution system. The WASA Water Quality Division has undertaken a number of programs to protect, maintain and enhance water quality in the distribution system. These programs include extensive water main flushing, cross connection control, as well as the following:

- Monitoring the water supply as it enters the distribution system
- Collecting and analyzing hundreds of samples every month from various locations in the distribution system, including residential properties, commercial buildings, schools, and daycare facilities
- Responding rapidly to customer reports of water quality problems or other water quality episodes
- Operating small mobile laboratory units to quickly respond to water quality complaints and emergencies
- Conducting research in conjunction with EPA and national experts in the industry regarding water chemistry, homeland security, corrosion control, and water quality monitoring.

Water Main Flushing – Each spring through fall, WASA conducts an aggressive program to systematically *flush* water mains in the distribution system. The water is released by sequentially opening fire hydrants and flushing water in a unidirectional (in one direction) manner. Some of the water being flushed may flow into the streams and rivers, so the added chloramines are neutralized in the process to protect aquatic life.

Flushing water through the pipes at high velocities removes potential build-up or scale in pipes that may cause discolored water. Sometimes this scale is knocked off the pipe wall but does not make it out of the system during the flushing. This may cause short periods of discolored water in customers' homes. Turning your faucets on for up to fifteen (15) minutes can help minimize the problem. WASA distributes notices in neighborhoods where this work will occur at least 48 hours prior to flushing. You can also find out in advance (up to a month) when WASA will be flushing in your area by checking the flushing schedule on our website, **www.dcwasa.com** or by calling 202-612-3440. The website is continuously updated throughout the flushing season.

Cross-Connection Control Regulation Program — The purpose of WASA's Cross-Connection Control Program is to eliminate potential *cross connections* — physical links that could allow contaminants to flow into the District water supply from customers' facilities. Backflow of contaminating materials may cause serious illness. WASA's cross-connection control regulations are published in Chapter 54 Title 21 DCMR under the heading Cross Connections. To protect public health, WASA is requiring local businesses to install backflow prevention devices at the water service connection to prevent contaminants from entering the drinking water supply. WASA is leading this cooperative effort, which includes the District Department of Health, the District Department of Consumer and Regulatory Affairs, the EPA and consumers.

Cross-connection surveyors will conduct inspections of the drinking water supply in commercial, industrial and apartment buildings on a schedule prioritized by hazard potential. If you have questions regarding cross-connection or backflow prevention devices, please call at 202-612-3440.

Consumers and Water Quality

As a consumer, you play a large role in enhancing the water quality in your home. If water has been stagnant for more than six (6) hours, flush water lines by running the cold water for 60 seconds prior to using the water from a faucet for drinking or cooking. It is recommended to use cold water from your tap for drinking and cooking. Some metals, such as iron and calcium, can accumulate in your hot water heater. Periodically, remove and clean the strainer/aerator device on your faucet to remove debris. If you use a water filter, WASA strongly recommends replacing the cartridge periodically as recommended by the manufacturer.

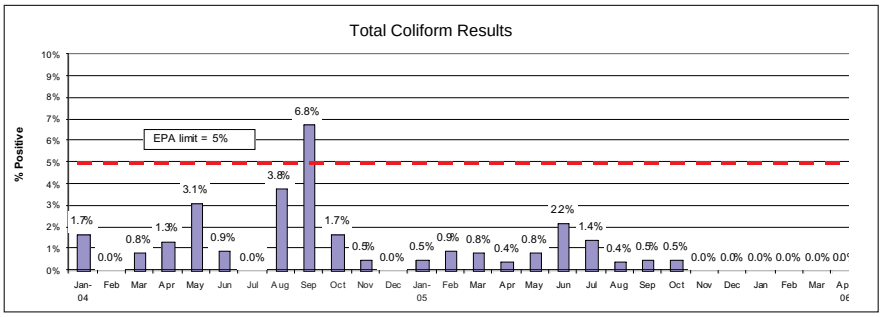
Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. Persons with these conditions should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at 1-800-426-4791.

Cryptosporidium is a microbial pathogen found in most surface waters in the U.S. The WA routinely monitors the Potomac River for *Cryptosporidium*. In 2005, they detected *Cryptosporidium* in one sample from the river (one oocyst in one of 12 samples). Current test methods do not allow us to determine if the microorganism was dead or capable of causing disease. The previous five years of monitoring—2000 through 2004—detected no *Cryptosporidium*. Although filtration can remove *Cryptosporidium*, it cannot guarantee 100 percent removal. The WA provides a multiple-barrier treatment approach to minimize the risk to the public from all disease-causing microorganisms through use of chemical treatment, highly efficient sedimentation and filtration technologies, and disinfection.

Ingesting *Cryptosporidium* may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. *Cryptosporidium* must be ingested to cause disease, and it may be spread through means other than drinking water. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people are at greater risk of developing a life-threatening illness. WASA encourages immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection.

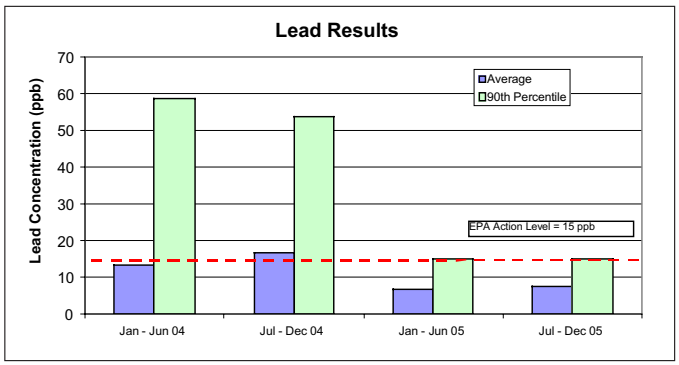
EPA and CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at 1-800-426-4791.



Compliance with EPA Drinking Water Standards

WASA collected and analyzed 300 to 400 samples per month for regulatory compliance in 2005. The major regulations include the Total Coliform Rule, Stage 1 Disinfectants and Disinfection Byproduct Rule, and Lead and Copper Rule.

EPA requires testing for coliforms because they can indicate the potential presence of more harmful microorganisms. If WASA detects coliform bacteria, vigorous follow-up sampling and testing is immediately conducted to ensure no harmful microorganisms are present.



The total coliform and the lead graphs display the 2004 and 2005 water quality data and show the improvement since starting the corrosion control treatment and extensive flushing. WASA will continue researching and monitoring water quality to ensure this high water quality is maintained.

Public Notification of Violations

This section provides a summary of violations, which must be included in this report, and public notices of certain violations that occurred in 2005 and 2006. Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

- **Consumer Confidence Report (CCR) Delivery to Primacy Agency** In 2005, WASA was required to deliver the 2004 CCR to EPA Region III by July 1, 2005. WASA delivered the 2004 CCR to EPA Headquarters by July 1, 2005. EPA Region III reviewed several drafts but did not receive a published copy by July 1, 2005. Upon learning of this situation, WASA sent the CCR to EPA Region III by electronic mail on July 11, 2005. To ensure that this situation does not occur in the future, WASA has added EPA Region III to the CCR distribution list.
- **Lead Service Line Replacement 45-Day Notice** The Lead and Copper Rule requires WASA to provide at least a 45-day notice to residents where lead service lines are to be replaced. In fiscal year 2005, WASA replaced more than 4,100 lead service lines. Of these, 37 homes did not receive the 45-day notice, but were notified in advance of the replacement. WASA reported this information to EPA in our Lead Service Line Replacement Report, dated September 30, 2005. To ensure that the customer receives proper notification prior to beginning the replacement work, the protocols for coordination between planning and construction have been revised.

  Please note – the following information is required by EPA: Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.
- **Stage 1 Disinfectant and Disinfection Byproduct Rule (DBPR) Monitoring – Site Change** We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not your drinking water meets health standards. During October 2004, we did not complete all monitoring or testing for TTHM and HAA5, and therefore cannot be sure of the quality of your drinking water during that time.

  Under the Stage 1 DBPR, WASA is required to collect tap samples in the distribution system every 3 months. To satisfy this requirement, WASA selects the taps at businesses and federal buildings to complete this monitoring. In October 2004, WASA attempted to collect a sample at one of the businesses and discovered that it was closed without notice. WASA immediately investigated another viable site and identified another location to collect the sample. WASA contacted EPA to inform them of the situation and to obtain the consent to the change in the location. However, on January 13, 2006, EPA notified WASA that they had not received an official site-change request and therefore had not approved the change in the sampling location; as a result, WASA incurred two monitoring violations for TTHM and HAA5. On March 10, 2006, WASA revised its Stage 1 DBPR Plan to ensure future site changes are approved by EPA in a timely manner. WASA also submitted the revised Stage 1 DBPR plan to EPA that includes these changes.
- **Stage 1 Disinfectant and Disinfection Byproduct Rule (DBPR) Monitoring – Total Chlorine** We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not your drinking water meets health standards. During January 2006, we did not complete all monitoring or testing for total chlorine, and therefore cannot be sure of the quality of your drinking water during that time.

Under the DBPR, WASA is required to collect samples for total chlorine when samples are collected for total coliform. In January 2006, WASA collected eight total coliform samples and total chlorine samples, but improperly analyzed the total chlorine samples. On January 23, 2006, WASA notified EPA of this situation requesting to invalidate these samples. On March 13, 2006, WASA revised its quality assurance/quality control procedures to ensure proper collection and analysis of future samples and has submitted these to EPA.

Any questions or concerns regarding these violation, please contact WASA's Water Quality Division at 202-612-3440, or by email **WaterQuality@dcwasa.com** or by writing to WASA, Water Quality Division 3900 Donaldson Place, N.W., Washington, D.C. 20016.

Copias en español de estes folleto están a la disposición en las bibliotecas públicas y en las clínicas del Departamento de Salud del District of Columbia, o llamando a la Oficina de Asuntos Públicos de la Autoridad de Agua y Desagües al teléfono 202-787-2200

What's In My Drinking Water?

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. The US Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. The table summarizes District drinking water test results for the year 2005. The water is tested for the presence of over 100 prescribed contaminants; however, for clarity only those detected are listed in the table. For a complete list of contaminants tested and the results, call 202-612-3440.

The table compares the level of each detected contaminant to an allowable upper limit (maximum contaminant level, or MCL) and the ideal goal (maximum contaminant level goal, or MCLG) set by EPA. All detected contaminants in District drinking water were within EPA-established maximum limits.

In addition to the contaminants listed in the table, the Washington Aqueduct and WASA routinely monitor numerous water quality parameters to optimize the quality of water delivered to the customer. The Unregulated Contaminant section in the table summarizes some of these contaminants. In addition, under EPA's interim Optimal Corrosion Control Treatment designation, WASA monitored water quality at 50 locations each month throughout the District. This program and the water quality results are described at **www.dcwasa.com**.

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 Safe Drinking Water Hotline 800-426-4791 or at **www.epa.gov/safewater**.

Washington, DC Drinking Water Analysis Data for 2005

Regulated Contaminants

Washington Aqueduct Water Treatment Plant Performance

	Units	EPA Limits MCLG	EPA Limits MCL or TT	DC Drinking Water	Description/Typical Sources of Contaminants
Turbidity	NTU	0	TT = 1 (maximum)	0.26 (maximum)	Turbidity can indicate the presence of disease causing microorganisms. Turbidity is often caused by soil runoff.
	% of monthly turbidity readings ≤ 0.3 NTU	0	TT = 95% (minimum)	100%	
Total Organic Carbon (TOC)	% ppm removal	NA	TT 25 percent removal	38% (lowest annual average) 33% to 55% (range of monthly averages)	Naturally present in the environment.

Water Entering WASA's Distribution System

	Units	EPA Limits MCLG	EPA Limits MCL	DC Drinking Water Highest	DC Drinking Water Range	Description/Typical Sources of Contaminants
Inorganic Metal						
Arsenic	ppb	0[1]	10[1]	0.6	ND to 0.6	Erosion of natural deposits; Runoff from orchards;
Barium	ppm	2	2	0.048	0.032 to 0.048	Erosion of natural deposits.
Chromium	ppb	100	100	1.0	ND to 1.0	Erosion of natural deposits.
Selenium	ppb	50	50	0.8	ND to 0.8	Erosion of natural deposits; discharge from mines.
Inorganic Ions						
Fluoride	ppm	4	4	1.43	0.53 to 1.43	Water additive which promotes strong teeth.
Nitrate	ppm	10	10	3.17	0.59 to 3.17	Runoff from fertilizer use; erosion of natural deposits
Synthetic Organic Contaminants						
Atrizine	ppb	3	3	0.53	ND to 0.53	Runoff from herbicide used on low crops.
Dalapon	ppb	200	200	1.35	ND to 1.35	Runoff from herbicide used on rights of way.
Simazine	ppb	4	4	0.1	ND to 0.1	Herbicide runoff
Radionuclides						
Beta Emitters	pCi/L	0	50[2]	3.8	ND to 3.8	Decay of natural and man-made deposits
Combined Radium	pCi/L	0	5	0.81	ND to 0.81	Erosion of natural deposits.

[1]These arsenic values are effective January 23, 2006. In 2005, the MCL was 50 ppb and there was no MCLG.
[2]The MCL for beta particles is 4 mrem/year. EPA considers 50pCi/L to be the level of concern for beta particles.

Washington, DC Drinking Water Analysis Data for 2005

Regulated Contaminants (continued)

WASA's Distribution System

Microbial Indicators

	Units	EPA Limits		DC Drinking Water		Description/Typical Sources of Contaminants
		MCLG	MCL or TT	Highest	Range	
Total Coliform Bacteria	% of total-coliform positive samples	0	5% (maximum)	2.2%	0 to 2.2%	Naturally present in the environment.
Fecal Coliform	Number positive	0	0	0	0	Human and animal fecal waste
E.coli Bacteria	Number positive	0	0	0	0	Human and animal fecal waste

Disinfectants and Disinfection Byproducts

Chlorine	ppm	4 (MRDLG) (annual average)	4 (MRDL) (annual average)	3.4 (Highest running annual average)	0.4 to 4.4 (Range of single site results)	Water additive that protects against microbiological contami nation. Chlorine is combined with ammonia to form Chloramine.
Total Trihalome-thanes	ppb	NA	80 (4-quarter running average)	40 (Highest 4-quarter running average)	15 to 67 (Range of single site results)	Trihalomethanes are a byproduct of drinking water disinfection.
Haloacetic Acids (5)	ppb	NA	60 (4-quarter running average)	34 (Highest 4-quarter running average)	15 to 64 (Range of single site results)	Haloacetic acids are a byproduct of drinking water disinfection.

Lead and Copper (at the customer's tap)

	Units	EPA Limits		DC Drinking Water		Description/Typical Sources of Contaminants
		MCLG	Action Level	Samples above AL	Range and 90th Percentile	
Lead						
Jan-June 2005 Monitoring Period	ppb	0	15	8 of 107	0 to 64 90%=15	Corrosion of household plumbing systems; erosion of natural deposits.
July-Dec. 2005 Monitoring Period				10 of 102	0 to 51 90%=15	
Copper						
Jan.-June 2005 Monitoring Period	ppm	1.3	1.3	0 of 107	0.003 to 0.230 90% = 0.102	Corrosion of household plumbing systems; and erosion of natural deposits.
July-Dec. 2005 Monitoring Period				0 of 102	0.003 to 0.219 90% = 0.077	

Washington, DC Drinking Water Analysis Data for 2005

Unregulated Contaminants

Water Entering WASA's Distribution System

Contaminant	Units	Range
Nickel	ppb	ND to 1.1
Aluminum	ppb	15 to 85
Lithium	ppb	ND to 4.0
Magnesium	ppm	6 to 12
Manganese	ppb	ND to 22.0
Metoachlor	ppb	ND to 0.86
Molybdenum	ppb	ND to 2.8
Potassium	ppm	2.0 to 4.8
Sodium	ppm	8.0 to 19.0
Strontium	ppb	112 to 380
Zinc	ppb	ND to 8.0
Perchlorate[1]	ppb	ND to <4

Other Water Quality Parameters – WASA's Distribution System

Alkalinity	ppm	33 to 109
Calcium Hardness	ppm as $CaCO_3$	64 to 180 (10th % = 91; 90th % = 131)
	grains per gallon (gpg)	4 to 11 (10th % = 5; 90th % = 8)
Orthophosphate	ppm	1.2 to 4.8
Nitrite	ppm as Nitrogen	ND to 0.32
pH		7.2 to 8.2
Temperature	degrees Fahrenheit	42 to 89

[1] The Washington Aqueduct (WA) used the EPA-approved method to determine the perchlorate levels reported in the table. The WA conducted additional tests with a new laboratory method, not yet approved by EPA, and results ranged from ND to 1.1 ppb. For more information pertaining to these results and general information about perchlorate, go to **www.dcwasa.com**.

Abbreviations and Definitions

AL = **Action Level.** The concentration of a contaminant which, if exceeded, triggers a treatment or other requirement that a water system must follow. Other requirements may include additional testing , public notification or capital improvements. The AL is not equivalent to a maximum contaminant level or MCL *(see definition below)*.

CDC = **Centers for Disease Control and Prevention**, located in Atlanta, preventing and controlling disease, injury, and disability. CDC is an agency of the U.S. Department of Health and Human Services.

HAA5 = **Haloacetic Acid 5.** The five haloacetic acid species required to be monitored by EPA.

MRDL = **Maximum Residual Disinfectant Level.** The highest level of a disinfectant that is allowed in drinking water.

MRDLG = **Maximum Residual Disinfectant Level Goal.** The level of drinking water disinfectant in water below which there is no known or expected risk to health. MDRLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

MCLG = **Maximum Contaminant Level Goal.** The level of a contaminant in water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

MCL = **Maximum Contaminant Level.** 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 technologies.

NA = Not Applicable.

ND = Non-Detectable.

NTU = Turbidity is measured with an instrument called a nephelometer, which measures the intensity of light scattered by suspended matter in the water. Measurements are given in nephelometric turbidity units (NTUs).

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

ppm = parts per million

ppb = parts per billion

TT = **Treatment Technique.** A required process intended to reduce the level of a contaminant in drinking water.

Turbidity = A measure of the cloudiness of water. We measure turbidity because it is a good indicator of the effectiveness of the water treatment system. Turbidity in excess of 5 NTU is just noticeable to the average person.

"<"= Less than. In some cases, the laboratory's analytical method was not capable of measuring below EPA's minimum detection level. In these cases, if the contaminant was not detected, a "less than" result is reported under the "Highest" detected level in DC's drinking water.

DC Water & Sewer Authority
5000 Overlook Ave., SW
Washington, DC 20032

For more information or questions concerning this report, call the WASA Water Quality Division at 202-612-3440. For other WASA-related information, please call one of the listed numbers.

Comments can also be e-mailed to info@dcwasa.com or faxed to 202-787-2210.

이 안내지에는 귀하께서 드시는 식수의 질에 대한 중요한 정보가 들어있습니다. 이해하시는데 도움이 필요하시거나 질문이 있으시면 한인봉사센타 (Korean Community Service Center: KCSC) 에서 도와드릴 것이오니, 240-683-6663 으로 연락 주시기 바랍니다.

本手冊備有有關飲用水的信息，若在閱讀的過程中需要幫忙解釋請與華京中華基督教會聯絡，電話是：202-898-0061

Copias en español de estes folleto están a la disposición en las bibliotecas públicas y en las clínicas del Departamento de Salud del District of Columbia, o llamando a la Oficina de Asuntos Públicos de la Autoridad de Agua y Desagües al teléfono 202-787-2200

Drinking Water Quality
WASA Water Quality 202-612-3440

Other General Information
WASA Switchboard 202-787-2000

Water Bills
Water Bill Action Line 202-354-3600

To Report Pipe Breaks, Leaks, or Open Hydrants
EMERGENCY (24 HOURS PER DAY)
WASA Water Operations 202-612-3400

Information About WASA
WASA Public Affairs Office and WASA's Programs 202-787-2200

Storm Drain Complaints
WASA Department of Sewer Services . .202-264-3820 or 202-612-3400

Source Water Protection
DC Department of Health 202-535-2190

Interstate Commission on the Potomac River Basin 301-984-1908

Drinking Water Treatment
Washington Aqueduct Division, USACE 202-764-2753

Safe Drinking Water Hotline
EPA 800-426-4791

Visit Our Website
WASA's annual Water Quality Report and other information about WASA are available on the Internet at:
- **http://www.dcwasa.com**

Other web sites with information about drinking water are listed below:
- EPA's Surf Your Watershed **http://www.epa.gov/surf**
- American Water Works Association **http://www.awwa.org**