dc water is life

DRINKING WATER

2009 QUALITY REPORT

Dear Customers,

I want to take this opportunity to introduce myself, and to re-introduce you to your water agency.

I took over as General Manager of the District of Columbia Water and Sewer Authority in October 2009. This is the first chance I have had to communicate with many of you, because the majority of those who use our services do not receive a monthly bill. It is my mission to make the Authority the nation's leading water and wastewater enterprise – and to make sure everyone in the District knows they can be confident in, and proud of, their water supply.

Since its inception in 1996, our agency has been known by its acronym, DC WASA. We've recently started doing business as DC Water. Why DC Water? Because water is the reason for everything we do. We provide safe, affordable drinking water at your tap. We operate more than 9,000 fire hydrants. And we treat enough wastewater every day to fill RFK Stadium – before discharging it, almost clean enough to drink, back into the Potomac River.

To that end, I am pleased to provide you with the 2009 Drinking Water Quality Report. You'll find that our water met or exceeded all federal regulations. If you have any questions about water quality or anything else we do, please contact us through our website at dcwater.com, visit us on Facebook or Twitter, or call our Customer Service department at (202) 354-3600.

Water is life. We are pleased and humbled to provide it to you.

George S. Hawkins
DC Water
General Manager

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 the surface of the land, and into the Potomac River, it dissolves naturally occurring minerals, leaves and vegetation, and sometimes even radioactive materials and can pick up substances resulting from the presence of animals or from human activity.

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

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PROTECTING THE DISTRICT DRINKING WATER SUPPLY

Protect The Watershed – A watershed is an area of land that drains to a particular point along a stream or river. The best way to protect the Potomac River from contamination is to help protect the watershed. Simple reminders that play a crucial role in protecting the watershed include:

- Take precautions to ensure that trash and debris do not enter storm drains and catch basins
- Dispose of household waste, grease and motor oil properly
- Report spills that could potentially enter the waterways
- Do not flush pharmaceuticals down the toilet or drain

For more information on pharmaceutical disposal, please visit the following websites:

- **www.whitehousedrugpolicy.gov/publications/pdf/prescrip_disposal.pdf**
- **www.epa.gov/ppcp/**

Please contact the District of Columbia's 311 call center to report spills or to seek assistance on waste disposal.

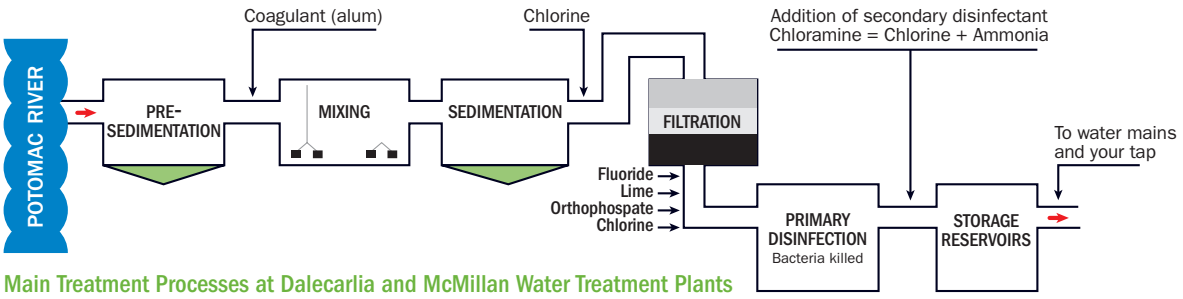
Get Involved – The **District of Columbia Water and Sewer Authority (DC Water) Board of Directors** conducts regular business meetings that are open to the public, generally on the first Thursday of each month at the Blue Plains Facility, 5000 Overlook Ave, SW, Washington, DC 20032. Please contact the Office of the Board Secretary at (202) 787-2330 to confirm the specific meeting time and location.

THE WATER TREATMENT AND DISTRIBUTION SYSTEM

DC Water maintains about 1,300 miles of pipe and distributes potable water to over 500,000 residents and businesses throughout the District. DC Water purchases drinking water from the US Army Corps of Engineers, Washington Aqueduct. The Washington Aqueduct draws water from the Potomac River at the Great Falls and the Little Falls intakes and treats the water at the Dalecarlia and McMillan Treatment Plants (see the water treatment diagram). The treatment process includes sedimentation, filtration, fluoridation, pH adjustment, primary disinfection using free chlorine, secondary disinfection with chloramine through the addition of ammonia, and corrosion control with orthophosphate.

Chloramine is a federally approved alternative to free chlorine. Chloramine must be removed from water used for kidney dialysis or aquariums. Please contact your physician or kidney dialysis center for the appropriate water treatment process. Contact your local pet store for the appropriate water treatment for fish tanks. For more information about chloramine, visit **www.dcwater.com/waterquality/faqs.cfm** or **www.epa.gov/safewater/disinfection/chloramine**.

WATER TREATMENT



Main Treatment Processes at Dalecarlia and McMillan Water Treatment Plants

Pre-Sedimentation - Allows large particles in untreated water to settle out naturally.

Mixing - "Coagulants" are added to the water to cause small particles to stick together when the water is mixed, making larger, heavier particles.

Sedimentation - Allows the newly formed larger particles to settle out naturally.

Filtration - Removes smaller particles by trapping them in sand filters.

Primary Disinfection - Chlorine/Chloramine (after 11-1-2000). Other chemicals added include:

- Lime to adjust the pH (the water's acidity) and orthophosphate to prevent corrosion.
- Fluoride at low levels to protect teeth (as recommended by the American Dental Association)

The Potomac River continued from page 1

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 in April 2002 under contract to the District of Columbia government. The assessment identified urban runoff, toxic spills, agriculture and inadequate wastewater treatment as potential contamination sources to the water supply. A redacted version of this document can be found at **www.potomacriver.org/cms/index.php?option=com_content&view=article&id=122&Itemid=95**.

Contact the Interstate Commission on the Potomac River Basin at (301) 984-1908 for more information or to join your neighbors in activities that help protect our water supply.

TIPS TO ENSURE WATER QUALITY IN YOUR HOME

Use high quality tap water for drinking and cooking. Water quality can decline when it sits in your pipes for several hours or more. Running the cold tap water for two minutes will bring in fresh water from the distribution system. Other household water usage activities are alternatives to running the tap, such as laundry, washing dishes, showers and flushing the toilet.

Use only cold tap water for drinking and cooking. Hot water can contain sediment that builds up in the water heater.

Clean your faucet strainers. Routinely remove the faucet aerator and clean the strainer of debris.

Replace filter cartridges routinely. Filters that are not replaced as recommended by the manufacturer can have high bacteria levels and metals.

Drain your water heater annually. Sediment and calcium can build up over time.

Flush your taps if you replace water pipes or fixtures. Flush cold water taps for five minutes to remove any particles from the pipe replacement.

WHAT'S IN MY DRINKING WATER?

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 Environmental Protection Agency's (EPA) Safe Drinking Water Hotline (800-426-4791).

EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems to ensure that tap water is safe to drink. 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 compares the level of each detected contaminant to limits set by EPA: an allowable upper limit, the maximum contaminant level (MCL) or treatment technique requirement (TT), and a goal, the maximum contaminant level goal (MCLG). There were no violations of the National Primary Drinking Water Regulations in 2009.

REGULATED CONTAMINANTS – Washington, DC Drinking Water Analysis Data for 2009

WASHINGTON AQUEDUCT WATER TREATMENT PLANT PERFORMANCE						
	Units	EPA Limits		DC Drinking Water		Description/Typical Sources of Contaminants
		MCLG	MCL or TT			
Turbidity	NTU	NA	TT = 1 (maximum)	(maximum) 0.12 (hourly)		Turbidity is often caused by soil runoff
	% of monthly turbidity readings ≤ 0.3 NTU	NA	TT = 95% (minimum)	100%		
Total Organic Carbon (TOC)	% removal	NA	TT 25-35% removal (varies with seasons)	40% (lowest annual average) 25% to 71% (range of monthly averages)		Naturally present in the environment
WATER ENTERING DC WATER'S DISTRIBUTION SYSTEM						
Inorganic Metal						
	Units	EPA Limits		DC Drinking Water		Description/Typical Sources of Contaminants
		MCLG	MCL	Highest	Range	
Arsenic	ppb	0	10.	0.66	0.18 to 0.66	Erosion of natural deposits; runoff from orchards
Barium	ppm	2	2	0.04	0.03 to 0.04	Erosion of natural deposits
Chromium	ppb	100	100	2	ND to 2	Erosion of natural deposits
Selenium	ppb	50	50	1.0	0.4 to 1.0	Erosion of natural deposits; discharge from mines
Inorganic Anions						
Fluoride	ppm	4.0	4.0	1.3	0.33 to 1.3	Water additive which promotes strong teeth
Nitrate[1]	ppm	10	10	2.6	0.6 to 2.6	Runoff from fertilizer use; erosion of natural deposits
Nitrite[1]	ppm	1	1	0.09	ND to 0.09	Runoff from fertilizer use; erosion of natural deposits
Synthetic Organic Contaminants						
	Units	EPA Limits		DC Drinking Water		Description/Typical Sources of Contaminants
		MCLG	MCL or TT	Highest	Range	
Atrazine	ppb	3	3	0.08	ND to 0.08	Runoff from herbicide used on row crops
2,4-D	ppb	70	70	0.2	ND to 0.2	Runoff from herbicide used on row crops
Simazine	ppb	4	4	0.07	ND to 0.07	Herbicide runoff
Volatile Organic Contaminants						
Xylenes	ppm	10	10	0.0005	ND to 0.0005	Discharge from petroleum factories; discharge from chemical factories
Radionuclides						
Beta emitters[2]	pCi/L	0	50[3]	4	ND to 4	Decay of natural and man-made deposits
Combined radium[2]	pCi/L	0	5	2	ND to 2	Erosion of natural deposits
DC WATER'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)	1.3%	0 to 1.3%	Naturally present in the environment
Fecal Coliform or *E.coli* bacteria	Number positive	0	0	0	0	Human and animal fecal waste

continued

Disinfectants and Disinfection Byproducts						
	Units	EPA Limits		DC Drinking Water		Description/Typical Sources of Contaminants
		MCLG	MCL or TT	Highest	Range	
Chlorine	ppm	4 (MRDLG) (annual average)	4 (MRDL) (annual average)	3.3 (Highest running annual average)	0.3 to 4.6 (Range of single site results)	Water additive that protects against microbiological contamination. Chlorine is combined with ammonia to form chloramine.
Total Trihalomethanes	ppb	NA	80 (4-quarter running average)	39 (Highest 4-quarter running average)	17 to 68 (Range of single site results)	By-products of drinking water disinfection
Haloacetic Acids (5)	ppb	NA	60 (4-quarter running average)	26 (Highest 4-quarter running average)	17 to 41 (Range of single site results)	By-products 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	90th Percentile	
Lead						
January-June 2009 Monitoring Period	ppb	0	15	3 of 102	6	Corrosion of household plumbing systems; erosion of natural deposits
July-December 2009 Monitoring Period	ppb	0	15	1 of 103	7	
Copper						
January-June 2009 Monitoring Period	ppm	1.3	1.3	0 of 102	0.1	Corrosion of household plumbing systems; erosion of natural deposits
July-December 2009 Monitoring Period	ppm	1.3	1.3	0 of 103	0.1	

CONTAMINANTS WITHOUT PRIMARY MCLS OR TREATMENT TECHNIQUES

WATER ENTERING DC WATER'S DISTRIBUTION SYSTEM			
Parameter	Units	Average	Range
Aluminum	ppb	37	18 to 123
Bromide	ppm	ND	ND to 0.16
Caffeine	ppb	ND	ND to 0.05
Calcium	ppm	40	31 to 54
Chloride	ppm	34	18 to 104
Cobalt	ppb	ND	ND to 0.23
Copper[4]	ppb	4.7	0.7 to 23
Iodide	ppb	8.1	3.9 to 14
Iron	ppb	ND	ND to 26
Lead[4]	ppb	0.29	0.07 to 0.77
Lithium	ppb	2.1	1.3 to 2.7
Magnesium	ppm	8.8	5.0 to 15
Manganese	ppb	1.3	0.5 to 3.0
Metolachlor	ppb	ND	ND to 0.06
Molybdenum	ppb	0.7	0.3 to 1.3
Nickel	ppb	2.1	1.6 to 2.8
Orthophosphate	ppm as PO_4	2.47	1.22 to 3.12
Perchlorate	ppb	ND	ND to 2.3
Potassium	ppm	2.9	2.0 to 4.1
Sodium	ppm	16	10 to 22
Strontium	ppb	165	114 to 231
Sulfate	ppm	51	35 to 70
Total Ammonia	ppm as nitrogen	0.75	ND to 1.16
Total Hardness	ppm as $CaCO_3$	137	101 to 177
Total Hardness	Grains per gallon as $CaCO_3$	8.0	5.9 to 10.3
Tritium[5]	pCi/L	100	ND to 800
Vanadium	ppb	0.8	0.3 to 1.4
Zinc	ppb	1.2	0.3 to 2.3

OTHER WATER QUALITY PARAMETERS – DC WATER'S DISTRIBUTION SYSTEM			
	Units	Average	Range
Alkalinity	ppm	60	35 to 90
Aluminum	ppm	0.007	0 to 0.058
Ammonia-Free	ppm as NH_3-N	0.16	0.01 to 0.39
Calcium Hardness	ppm as $CaCO_3$	102	80 to 132
Calcium Hardness	Grains per gallon as $CaCO_3$	5.9	4.7 to 7.7
Dissolved Orthophosphate	ppm	2.11	1.72 to 2.46
Iron[6]	ppm	0.08	0 to 0.7
Nitrite	ppm as NO_2-N	0.02	0.002 to 0.122
pH	–	7.59	7.48 to 7.77
Sulfate	ppm	52	32 to 75
Temperature	Degrees Fahrenheit	65	45 to 83
Total Dissolved Solids	ppm	173	103 to 351

1 The levels shown for this parameter were derived from both compliance data and routine process control data.

2 Results are from the 2008 monitoring year, which is the most recent sampling completed in accordance with EPA regulations.

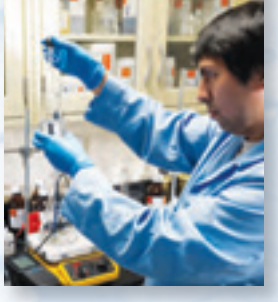
3 The MCL for beta particles is 4 mrem/year. EPA considers 50 pCi/L to be the level of concern for beta particles.

4 Results represent levels entering DC Water's distribution system and are distinct from lead and copper compliance monitoring conducted in residential homes.

5 EPA requested the monitoring for tritium once every 3 years. In 2008, the Washington Aqueduct monitored quarterly samples for tritium. EPA considers 20,000 pCi/L to be the level of concern for tritium.

6 The secondary maximum contaminant level (SMCL) for iron is 0.3 ppm. SMCLs are established by EPA only as guidelines to assist public water systems in managing their drinking water for aesthetic considerations, such as taste, color, or odor. These contaminants are not considered to present a risk to human health at the SMCL.

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. These people should seek advice about drinking water from their health care providers. The U.S. Environmental Protection Agency (EPA) and the Centers for Disease Control and Prevention (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 (800 426-4791).

Cryptosporidium

Cryptosporidium is a microbial pathogen found in most surface water in the U.S. The Washington Aqueduct monitors for *Cryptosporidium* in the Potomac River every month. In October 2005, the Washington Aqueduct detected *Cryptosporidium* at 1.5 oocysts per 100 liters in one sample. *Cryptosporidium* has not been detected in any sample since October 2005.

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. DC Water encourages immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection.

Lead

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. DC Water is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for at least 2 minutes before using water for drinking or cooking. If you are concerned about lead in your drinking water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at **www.epa.gov/safewater/lead**.

ABBREVIATIONS AND DEFINITIONS

AL – Action Level. The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which 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).

$CaCO_3$ – Calcium carbonate

Haloacetic acids (5) – The five haloacetic acid species required to be monitored by EPA.

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 technology.

MCLG – Maximum Contaminant Level Goal. 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.

MRDL – Maximum Residual Disinfectant Level. 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.

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

mrem/year – millirems per year. A measure of radiation absorbed by the body.

NA – Not Applicable

ND – Non-Detectable

NH_3-N – Measurement of ammonia in the form of nitrogen.

NO_2-N – Measurement of nitrite in the form of nitrogen.

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).

oocyst – The earliest stage of the life cycle of a parasitic protozoan (e.g., *Cryptosporidium*) in which it is enclosed in a hard-shelled capsule.

pCi/L – Picocuries per liter. A measure of radioactivity.

PO_4 – Phosphate

Potable – Water of sufficiently high quality that can be consumed or used without risk of immediate or long term harm.

ppb – parts per billion

ppm – parts per million

SMCL – Secondary Maximum Contaminant Limit. Established only as a guideline to assist public water systems in managing their drinking water for aesthetic considerations, such as taste, color, and odor.

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 and a good indicator of the effectiveness of the water treatment system. Turbidity in excess of 5 NTU is just noticeable to the average person.

District of Columbia Water and Sewer Authority
5000 Overlook Avenue, SW
Washington, DC 20032
William M. Walker – *Chairman of the Board*
George S. Hawkins – *General Manager*

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DRINKING WATER 2009 QUALITY REPORT

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trees	water	energy	solid waste	greenhouse gases
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Calculations based on research by Environmental Defense and other members of the Paper Task Force.

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SPECIAL STUDY ON HOUSEHOLD PLUMBING AND LEAD

DC Water continues to study lead in drinking water and is committed to reducing lead levels in households throughout the District. In 2008, DC Water commissioned a study, conducted by HDR Engineering, to examine the relationship between household galvanized plumbing and lead in drinking water. Galvanized plumbing was installed in many homes that were built before the 1960s and is known to build up iron corrosion scales.

The study, completed September 2009, found that galvanized pipes can release lead in drinking water in households that currently or previously had a lead service line. This is the result of a lead service line releasing lead over many years and accumulating on the corroded surfaces of household galvanized pipes. Homes where the service line has been replaced can continue to experience periodic release of lead in drinking water until the galvanized plumbing is replaced.

DC Water recommends residents replace household galvanized plumbing. If pipe replacement is not an option, residents are encouraged to use a filter for lead removal. For more information about lead in drinking water and galvanized plumbing, visit **www.dcwater.com/waterquality**.

CONTACT INFORMATION

If you have any questions about this report or your drinking water, please call DC Water's Water Quality Division at (202) 612-3440 or visit us on the web at **www.dcwater.com**. For other DC Water related information or services, please call:

Customer Service . . . . . (202) 354-3600
Emergency Call Center . . . . . (202) 612-3400
Public Affairs . . . . . (202) 787-2200

OTHER IMPORTANT NUMBERS:

Source Water Protection
District Department of the Environment. . . . . (202) 535-2600
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

You can also visit the EPA on the web at **www.epa.gov**.

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.

本手册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美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 clinicas del Departmento 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.