

# 2007 ANNUAL WATER QUALITY REPORT

## Arlington's High-Quality Water

This annual "Consumer Confidence Report," required by the Safe Drinking Water Act, tells you where your water comes from, what our tests show about it and other things you should know about drinking water.

Arlington's Department of Environmental Services (DES)

provides residents with a safe and reliable supply of high-quality drinking water. The DES tests County water using sophisticated equipment and advanced procedures. Our water meets all state and federal standards for quality.

Notice to building managers for office, commercial, and multifamily residential buildings: Please share the information in this Water Quality report with all occupants of your facility. Contact the Water Control Center at 703-228-6555 for additional information or copies of this report.

Aviso a los administradores de edificios de oficinas, propiedades comerciales y unidades residenciales: Por favor comparta la información de este informe sobre la Calidad del Agua con los ocupantes de su establecimiento. Comuníquese con el Centro Para Control del Agua al 703-228-6555 para mayor información o para recibir copias de este informe.



This photo shows the inside of the Dalecarlia Treatment Plant, where approximately 9 billion gallons of Arlington's drinking water is treated each year.



U.S. EPA



Courtesy of AWWA

## What's in the Water

The sources of drinking water – 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. The water also can pick up substances resulting from animals or human activity.

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic

wastewater discharges, oil and gas production, mining or farming.

- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff and septic systems.
- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

The water treatment process removes contaminants, making Arlington's water safe to drink. 💧

## Where Arlington's Water Comes From

Arlington County purchases its water from the Washington Aqueduct Division of the Army Corps of Engineers. The Washington Aqueduct operates two water treatment plants in the District of Columbia. The plants treat water from a surface water source, the Potomac River.

Arlington's water comes from the Dalecarlia Treatment Plant, located on MacArthur Boulevard in Northwest Washington. Our water source is routinely monitored for vulnerability and

influence through an assessment program that includes observing land-use activities. The Arlington Waterworks maintains water quality assurance through our continuous distribution/storage evaluations and routine water sampling analysis.



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## Prescription for Safe Disposal of Unwanted Medicines

In the past, the advice was to flush or pour extra or unwanted medicines down the drain. Today, there's a new antidote for safe disposal, due to growing concerns about local waterways and ultimately our drinking water supply.

Arlington County water experts and federal officials strongly recommend **disposing of over-the-counter and prescription medications with your regular trash.** Physicians nationwide are also being discouraged from over-prescribing medications to prevent the need for patients to dispose of leftover drugs.

Here are two easy ways to properly dispose of unwanted medications:

- Remove unused or expired prescription drugs from the original container. Disguise them in an unattractive substance such as used coffee grounds or kitty

litter to avoid theft and put them in your garbage.

- Ask your pharmacist if they accept unused prescriptions as part of a drug take-back program that properly and safely disposes of medications.



Though there have been concerns about trace amounts of prescription medications found in drinking water, **Arlington's water supply is safe and meets Environmental Protection Agency standards.** The

Washington Aqueduct provides our drinking water, after being drawn from the Potomac River and treated. Regular sampling and testing ensure the water delivered to **residents is safe and of the highest quality.**

### Who to call with questions

How to dispose of medications – 703-228-6570.  
Arlington's water quality – call 703-228-6555. 💧

## Water and Sewer Rates Increase

In the coming months, you may notice an increase in your water and sewer rates. The rate changes reflect a critical investment to the County's Water Pollution Control Plant, located in South Arlington.

Significant renovations now under way at the plant will modernize our infrastructure and enable the County to meet stringent new state and federal environmental regulations. The facility upgrade also will increase capacity, which is essential to managing Arlington's growing population. Other benefits include cleaner water discharged to Four Mile Run, minimized plant-related odors and improved removal of nitrogen, resulting in a healthier Chesapeake Bay.

### Measuring the Rates

- Each year, the County Board approves the water rate and a separate sanitary sewer rate.
- Both charges are based directly, one-for-one, on the amount of water used. Water usage is measured by meters adjacent to a residence or business.
- On May 1, 2008, the water rate increases to \$3.35 per 1,000 gallons of metered water consumption (from \$3.34) and the sewer rate will be \$7.19 per 1,000 gallons (from \$5.86). The last increase was in May 2007.

### Simple Steps to Save Water and Lower Your Bill

- Repair leaks in faucets, toilets, and hoses.
- Install more efficient water fixtures, such as aerators and low-volume toilets.
- Run your clothes washer and dishwasher only when full.
- Take shorter showers.
- Turn off the water while you brush your teeth, shave and shampoo your hair.
- Conserve when watering your lawn – use only what is needed, prevent run-off, and avoid watering during the heat of the day. Reminder: There are no credits available to sewer charges for water used for irrigation.

- Every three months, residents in duplex and single-family homes receive utility bills from the County. The utility bills include charges for water, sewer and trash/recycling services.
- Residential customers' summer quarterly bills will be the first to reflect the increase.

**Need more information?** Call 703-228-6570 with questions about your water and sewer bills. Or go to [www.arlingtonva.us/des](http://www.arlingtonva.us/des) and click on "Water & Wastewater." 💧

## How to Read This Table

It's easy! Our water is tested to ensure it's safe and healthy. Test results from 2007 are presented in the table (footnotes below).

The column marked **GOAL** shows the Maximum Contaminant Level Goal or **MCLG**. This is 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.

The column marked **MAXIMUM ALLOWED** is the Maximum Contaminant Level or **MCL**. This is 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)** is the

highest level of a residual disinfectant that is allowed in drinking water.

**MAXIMUM RESIDUAL DISINFECTANT LEVEL GOAL (MRDLG)** is the level of residual disinfectant below which there is no known or expected risk to health. MRDLGs allow for a margin of safety.

**NON-DETECTS (ND)** – lab analysis indicates the contaminant is not present.

**NEPHELOMETRIC TURBIDITY UNIT (NTU)** is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

**PARTS PER MILLION (PPM) OR MILLIGRAMS PER LITER (MG/L)** corresponds to one minute in two years or a single penny in \$10,000.

**PARTS PER BILLION (PPB)** corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

**PARTS PER TRILLION (PPT)** corresponds to one minute in 2,000,000 years, or a single penny in \$10,000,000,000.

**PICOCURIRES PER LITER (PCI/L)** is a measure of the radioactivity in water.

The column marked **DETECTED LEVEL** shows the results observed in our water during the most recent round of testing.

**SOURCE OF SUBSTANCE** provides an explanation of the typical natural or man-made origins of the contaminant.

**ACTION LEVEL (AL)** is the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

**TREATMENT TECHNIQUE (TT)** is a required process intended to reduce the level of a contaminant in drinking water.

### LEVELS OF COMPOUNDS IN ARLINGTON DRINKING WATER

Average Hardness	8.9 grains/gal
Average pH	7.7
Average Chloramine Residual	3.2 ppm
Average Fluoride	0.83 ppm

**NOTE:** Arlington County received 10 positive samples (out of 1459) for total coliform in the calendar year 2007. Subsequent resampling at the locations was negative for coliform bacteria. There were no detections of *E. coli* in any of the monthly samples during calendar year 2007.

## Summary of 2007 Water Quality Data

FINISHED WATER CHARACTERISTICS, SOURCE MONITORING						
Substance	Unit	Goal (MCLG)	Max. Allowed (MCL)	Detected Level	Range of Levels Tested	Source of Substance
Arsenic	ppb	0	10	0.52	ND – 0.52	Run off from orchards, glass and electronic product waste <sup>4</sup>
Atrazine	ppb	3	3	0.5	ND – 0.5	Runoff from herbicide used on row crops
Barium	ppm	2	2	0.05	0.03 – 0.05	Discharge of drilling waste from metal refineries <sup>4</sup>
Beta/positron Emitters <sup>6,7</sup>	pCi/L	0	50	4	ND – 4	Decay of natural and man-made deposits
Chromium	ppb	100	100	3	0.7 – 3	Discharge from steel and pulp mills <sup>4</sup>
Cyanide	ppb	200	200	30	ND – 30	Discharge from steel/metal factories; discharge from plastic and fertilizer factories
Fluoride	ppm	4.0	4.0	1.1	0.05 – 1.1	Water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate (as Nitrogen)	ppm	10	10	3	0.1 – 3	Runoff from fertilizer use; leaching from septic tanks, sewage
Nitrite (as Nitrogen)	ppm	1	1	0.02	ND – 0.02	Runoff from fertilizer use; leaching from septic tanks, sewage
Radium 226/228 <sup>8</sup>	pCi/L	0	5	0.8	ND – 0.8	<sup>4</sup>
Selenium	ppb	50	50	0.7	ND – 0.7	Discharge from petroleum, mines and metal refineries
Simazine	ppb	4	4	0.2	ND – 0.2	Herbicide runoff
Total Organic Carbon (TOC)	ppm	n/a	TT	Running annual average removal ratio is required to be greater than 1.0. Removal ratio actually achieved ≥ 1.6.		Naturally present in the environment
Turbidity <sup>3</sup>	NTU	n/a	TT	0.21 = highest single measurement. Lowest monthly percentage of samples meeting minimum turbidity requirements = 100%.		Soil runoff

FINISHED WATER CHARACTERISTICS, DISTRIBUTION SYSTEM MONITORING						
Substance	Unit	Goal (MCLG)	Max. Allowed (MCL)	Detected Level	Range of Levels Tested	Source of Substance
Copper <sup>1</sup>	ppm	1.3	AL – 1.3	0.053	0.002 – 0.119	Leaching from wood preservatives <sup>4,5</sup>
Lead <sup>2</sup>	ppb	0	AL – 15	3.1	ND – 26.4	Runoff from fertilizer use; leaching from septic tanks <sup>4,5</sup>
Total Coliform <sup>9</sup>	n/a	n/a	<sup>10</sup>	3.2%	ND – 3.2%	Naturally present in the environment
Chloramines <sup>9</sup>	ppm	(MRDLG) 4	(MRDL) 4	3.2	2.1 – 3.5	Water additive used to control microbes
TTHM <sup>9</sup>	ppb	n/a	80	39	20 – 63.4	By-product of drinking water chlorination
HAA5 <sup>9</sup>	ppb	n/a	60	31	1.3 – 45.5	By-product of drinking water chlorination

### Notice About Perchlorate

Perchlorate is a naturally occurring as well as man-made compound. Its presence in drinking water is currently unregulated and utilities are not required to monitor for it. In 2007, the Washington Aqueduct began voluntarily participating in a nonregulatory perchlorate sampling project for the Potomac River, funded by the Environmental Protection Agency (EPA).

EPA has established a reference dose of 24.5 parts per billion (ppb) for perchlorate. A reference dose is a scientific estimate of a daily exposure level that is not expected to cause adverse health effects in humans. The reference

dose will be used in EPA's on-going efforts to address perchlorate in drinking water.

The samples collected in 2007 from our Potomac River water filtration plant source and treated water show trace amounts of perchlorate at levels 3.1 ppb or less, far below the EPA reference dose level. We consider the occurrence of perchlorate at levels observed in our Potomac plant water is insignificant and not a health concern. If you have special health concerns, you can get additional information from the EPA at [www.epa.gov/safewater](http://www.epa.gov/safewater) or contact the EPA's Safe Drinking Water Hotline at 1-800-426-4791.

### TABLE FOOTNOTES

- <sup>1</sup> The Detected Level represents the 90th percentile value. None of the 50 samples tested for copper exceeded the current Action Level of 1.3 ppm.
- <sup>2</sup> The Detected Level represents the 90th percentile value. One of the 50 samples tested for lead (2% of sample set) exceeded the current Action Level of 15 ppb.
- <sup>3</sup> Turbidity is the measure of cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of the filtration process. The turbidity level of filtered water shall be less than or equal to 0.3 NTU in at least 95% of the measurements taken each month, and shall at no time exceed 1 NTU.
- <sup>4</sup> Erosion of natural deposits or products.
- <sup>5</sup> Corrosion of household plumbing
- <sup>6</sup> Most recent monitoring for this parameter was 2005.
- <sup>7</sup> The MCL for Beta particles is 4 mrem/year. EPA considers 50 pCi/L to be the level of concern for Beta particles.
- <sup>8</sup> The Detected Level represents the highest monthly percentage of positive results.
- <sup>9</sup> The Detected Level represents the highest running annual compliance average during the calendar year.
- <sup>10</sup> Less than 5% of monthly samples contain coliform bacteria

## Important Health Information



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Source water is tested for *Cryptosporidium*, a parasite that has caused outbreaks of intestinal disease in the United States and overseas. It is common in surface water, difficult to kill and even the best water system will contain some live parasites. The Environmental Protection Agency (EPA) is currently working to improve the control

of microbial pathogens, namely the protozoan *Cryptosporidium*, in drinking water. The Potomac River source was monitored monthly at Great Falls for *Cryptosporidium* during 2007 and there were no detections. No precaution about County drinking water is currently necessary for the general public. 💧

### Advice for Special Populations

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 at risk from infections. These people should seek advice from their health care providers about drinking water.

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, (800) 426-4791.

## EPA Regulations

To ensure tap water is safe to drink, EPA mandates regulations that limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

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.

Call the EPA's Safe Drinking Water Hotline at (800) 426-4791 for information about contaminants and potential health effects. 💧

### Notice to Arlington County Water System Customers

In keeping with National Primary Drinking Water Regulations, we are informing you that Arlington violated a portion of state regulations concerning frequency of monitoring drinking water. We are required to regularly monitor our drinking water for specific contaminants. Results of this monitoring indicate whether our drinking water meets health standards.

During October 2007, we did not complete all required monitoring for Total Coliform Bacteria (including the associated residual disinfectant levels), and therefore we cannot be sure of the quality of our drinking water during that month. However, the samples collected in that period met bacteriological quality

requirements. Each month, 120 routine samples for bacteriological analysis are required, and 109 were analyzed in October 2007. Past records show our system has continually demonstrated compliance with the regulations regarding bacteriological sampling and quality.

There is nothing you need to do at this time. The County has addressed this one-time lapse in our monitoring protocol by revising our sampling and data reporting. The safety of Arlington County's water system is paramount. We will continue to diligently manage this critical resource and report any alerts to citizens. For more information, contact the Water Control Center at 703-228-6555.