



2003

Drinking Water Quality Report

This report is being mailed to you as a requirement of the federal Safe Drinking Water Act.
NOTE: Industrial and commercial customers, including hospitals, medical centers, and health clinics, please forward this report to your Environmental Compliance Manager.

Philadelphia's water is safe and healthy to drink for most people. For people with special health concerns, please see the information on page two.

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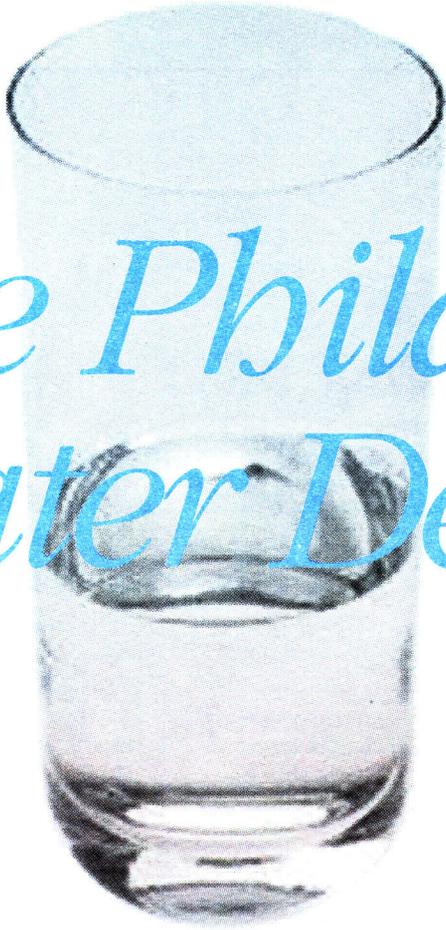
PWD is an active and proud member of:

- American Water Resources Association
- American Water Works Association
- American Water Works Association Research Foundation
- Partnership for Safe Water
- American Public Works Association
- Association of Metropolitan Water Agencies
- Association of Metropolitan Sewerage Agencies
- Water Environment Federation
- Water Environment Research Foundation

PWD's Public Water System Identification #PA1510001

This report is available online at <http://www.phila.gov/water>

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The Philadelphia Water Department

The Philadelphia Water Department (PWD) is pleased to present our 2003 Water Quality Report. The good news is – your tap water is top quality. This report provides our customers with a summary of where Philadelphia's drinking water comes from, how it is treated and the results of water quality monitoring performed by us on a daily basis.

Para obtener una copia del informe en Español sobre los resultados más recientes de la calidad del agua publicado por el Departamento de Agua de Philadelphia, llame al 215-685-6300.

People With Special Health Concerns

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 and 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.

Environmental Protection Agency/Centers for Disease Control (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.

The U.S. Environmental Protection Agency (EPA) requires all water utilities to produce and distribute water quality reports on an annual basis. This report, published in April 2004, includes water quality information for the 2003 calendar year.

We have consistently performed better than all drinking water standards developed by the EPA to protect public health. In fact, all of Philadelphia's drinking water plants were among the first in the nation to receive the EPA Director's Award in 1998 for meeting standards for excellence established under the Partnership for Safe Water program.

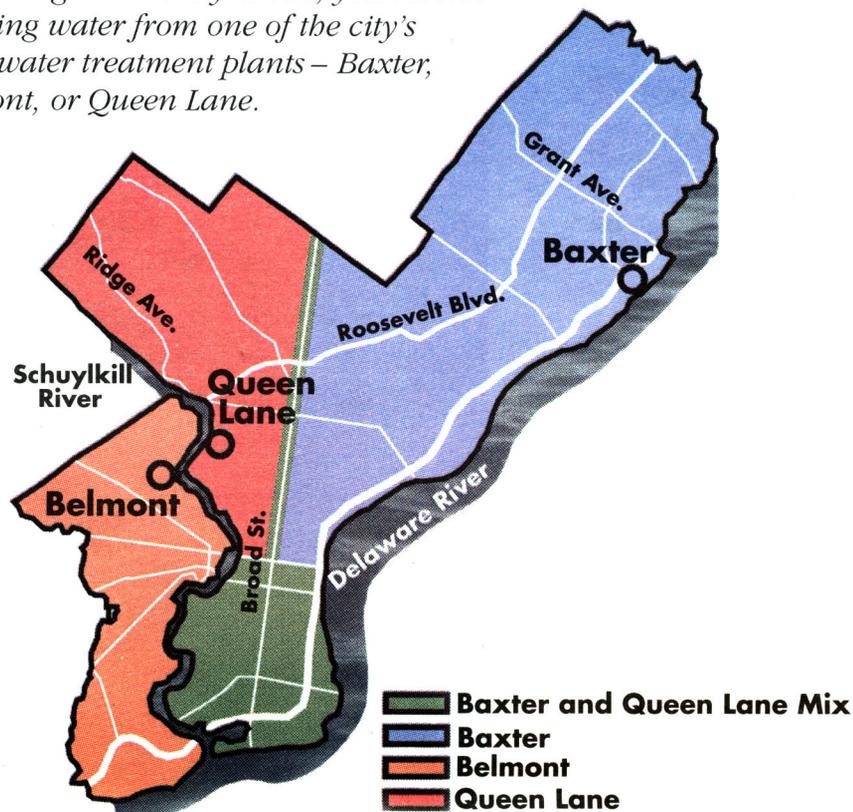
How do we do this? We use proven treatment practices at our water treatment plants and we participate in groundbreaking research while keeping water rates among the lowest in the region.

Where does Philadelphia's drinking water come from?

The water that we treat comes from the Schuylkill and Delaware rivers. Rivers are surface water supplies. Philadelphia does not use groundwater. Each river contributes approximately one-half of the City's overall supply. We produce approximately 270 million gallons of high-quality drinking water for our customers on a daily basis.

PWD has three water treatment plants that process untreated river water. The Queen Lane Plant is located in East Falls and its water comes from the Schuylkill River. Its intake is located along Kelly Drive. The Belmont Plant is located in Wynnefield and its water also comes from the Schuylkill River. Its intake is located along West River Drive. The Baxter Plant is located in Torresdale and its water comes from the Delaware River. Its intake is located at the plant on the Delaware River.

Depending on where you live, you receive drinking water from one of the city's three water treatment plants – Baxter, Belmont, or Queen Lane.



How do we treat the water so you can drink it?

Like the majority of water utilities in the U.S., we use a multi-step treatment process at all three of our drinking water treatment plants. The Water Treatment Process diagram on page five provides a brief description of drinking water treatment in Philadelphia.

Why is chlorine used to disinfect the drinking water?

State and federal laws require the disinfection of all public water supplies. EPA and health agencies recognize that using chlorine is the most effective way to protect public health from disease-causing organisms that can be found in rivers and streams. However, chlorine can chemically react with natural materials in rivers to form disinfection byproducts, such as trihalomethanes.

We have been adjusting our treatment process over the years to reduce this chemical reaction. But we also ensure that the treated water that is distributed through the City's water mains to your homes has a "chlorine residual." This residual continues to protect your water against bacteria and other organisms on its journey to your home tap.

Delaware River Watershed



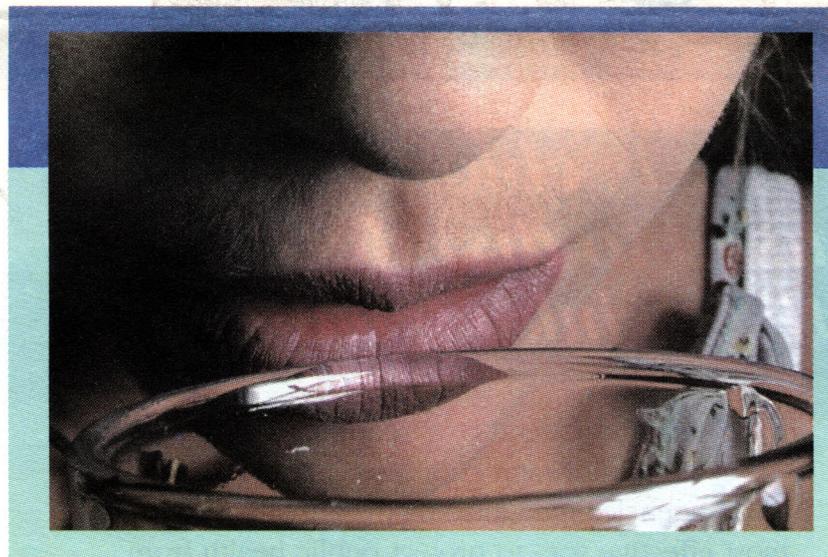
Philadelphia is located in the Delaware River Watershed, which begins in New York State and extends 330 miles south to the mouth of the Delaware Bay. The Schuylkill River is part of the Delaware River Watershed.

How do drinking water sources become polluted?

Across the nation, sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water (such as rain and melting snow) 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 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 storm water 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 storm water runoff and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production. They can also come from gas stations, urban storm water runoff (from streets and parking lots) and septic systems.
- Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.



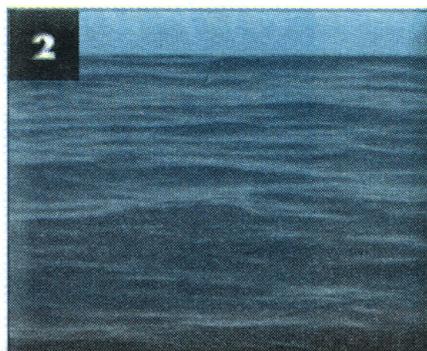
How do we test the water to assure its high quality?

We perform more than 350,000 tests annually at our three drinking water treatment plants to make sure the treatment processes are working as expected. In addition, our scientists, engineers and technicians analyze thousands of samples of tap water each year at our sophisticated testing laboratory. This water is collected from city reservoirs and from more than 65 locations throughout Philadelphia.

Water Treatment



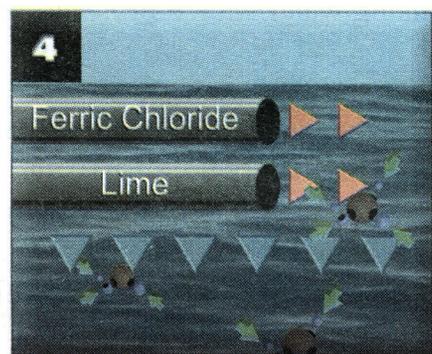
1 Delaware or Schuylkill River



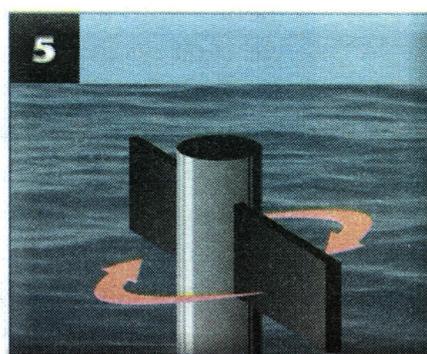
2 Natural Settling



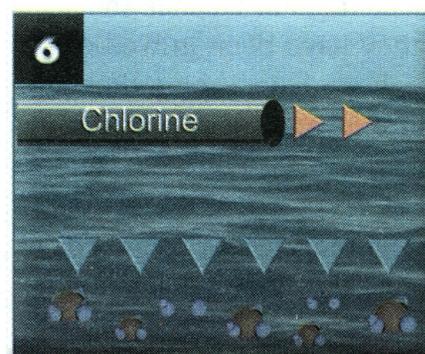
3 Disinfection



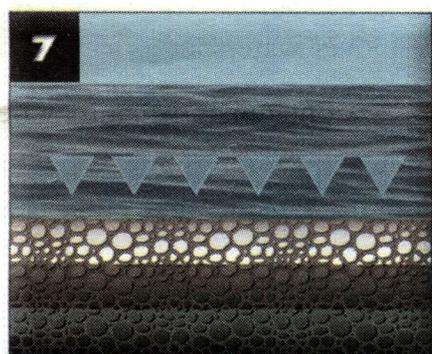
4 Coagulation



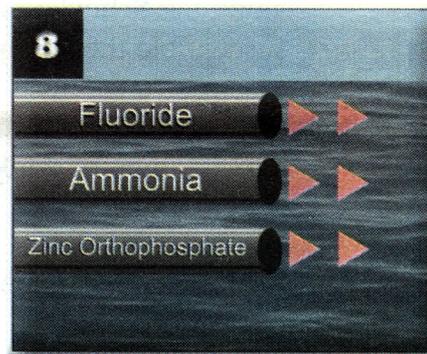
5 Flocculation



6 Sedimentation



7 Filtration



8 Final Treatment



9 Distribution

1. The River

The source water comes from either the Delaware or Schuylkill River.

2. Natural Settling

Water is stored in reservoirs or basins after it has been pumped from the river to allow sediments to settle.

3. Disinfection

Chlorine is added to kill disease-causing organisms.

4. Coagulation

The river water is "coagulated." Chemicals are added to the water to cause smaller particles in water to join together. This makes them heavier so that they will settle to the bottom of the basin.

5. Flocculation

The water is mixed to make sure the added chemicals are well blended and react with all of the smaller particles. The particles combine to form "floc" which settle to the bottom of the basin.

6. Sedimentation

The newly joined particles or "floc" settle by gravity and are removed from the bottom of the mixing tanks.

7. Filtration

The water is pushed through filters, which remove finer particles still in the water for additional purification.

8. Final Treatment

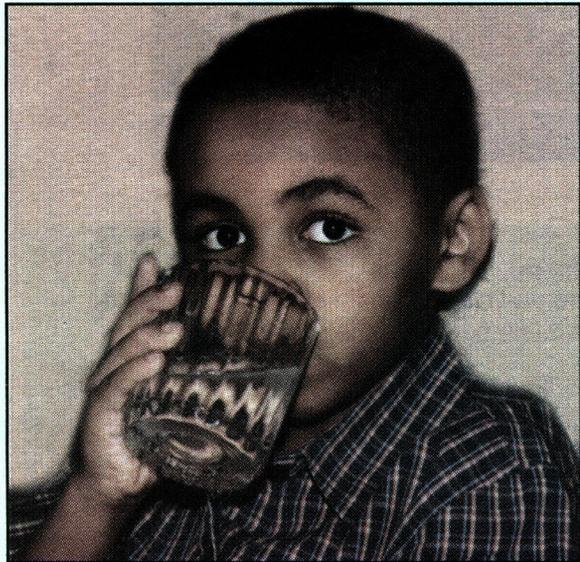
Fluoride is added to help prevent tooth decay. Zinc orthophosphate is added to minimize corrosion activity between water and piping materials. Ammonia is added to reduce chlorine-like tastes and to help the chlorine to persist in the water while it travels through the water main system.

9. Distribution

The treated water is distributed through nearly 3,300 miles of water mains.

How do rivers become polluted?

At their sources, the Delaware and Schuylkill rivers are generally clean rivers. But as the rivers flow downstream, they pick up contaminants from many sources – storm water runoff washes pollutants on the land into the rivers, and communities and industries discharge used water back into the rivers. Today, the City enjoys watersheds that are cleaner and healthier than they have been in well over a century. Although we have seen a dramatic improvement in the water quality of the City's two major rivers since the passage of the federal Clean Water Act in the early 1970s, there is still more work that needs to be done to protect our drinking water sources from pollution.



How do we protect our water supplies from pollution?

We carefully safeguard our urban water supply through a variety of practices and research projects designed to protect our rivers and watersheds. Currently, we are undertaking a comprehensive approach to safeguard the region's water environment. This includes integrating our "wet weather" programs – combined sewer overflows and storm water management – with a new drinking water source protection program. But we can't do this alone.

We need to partner with other stakeholders throughout the watershed to achieve a sensible balance between cost and environmental benefit. One of our programs has included a source water assessment of the Schuylkill River. Funded in part by a grant from the Pennsylvania Department of Environmental Protection, we have partnered with Aqua America (formerly Philadelphia Suburban Water Company) and the Pennsylvania American Water Company to perform a source water assessment of water intakes along the Schuylkill and its tributaries. The study has assessed how susceptible the Schuylkill River watershed is to pollution. The assessment details the major issues within the watershed that threaten the quality of the drinking water supply. The river is a major source of drinking water for the public served by these three water utilities. In addition, the Philadelphia Water Department has conducted an assessment for seven surface water intakes along the tidal section of the Delaware River.

Please see the Special Supplement included with this report for an update on our assessments and protection activities. For information about the quality of our region's rivers and streams, call the Pennsylvania Department of Environmental Protection at 484-250-5900 or check their website (<http://www.dep.state.pa.us>).

**We partner with many community,
governmental, and other groups
to protect our precious water
resources.**

What do we look for?

In addition to the contaminants that appear in our charts, we look for over 100 other contaminants that were not found at reportable levels. These include: arsenic, antimony, beryllium, cyanide, thallium, cadmium, mercury, nickel, silver, selenium, benzene, carbon tetrachloride, p-dichlorobenzene, 1,2-dichloroethane, trichloroethylene, 1,1,1-trichloroethane, 1,2,4-trichlorobenzene, 1,1,2-trichloroethane, toluene, total xylenes, chlorobenzene, o-dichlorobenzene, c-1,2-dichloroethylene, t-1,2-dichloroethylene, 1,2-dichloropropane, ethyl benzene, styrene, tetrachloroethylene, di(2-ethylhexyl)adipate, endosulfan, oxamyl, pichloram, benzo(a)pyrene, carbofuran, chlordane, dibromochloropropane, ethylene dibromide, methoxychlor, 1,1-dichloroethylene, atrazine, di(2-ethylhexyl) phthalate, simazine, dichloromethane, and pentachlorophenol.

Taste and Odor

We also test for aluminum, chloride, color, iron, manganese, pH, sulfate, total dissolved solids, and zinc to ensure that tap water meets all water quality taste and odor guidelines.

Waived Requirements

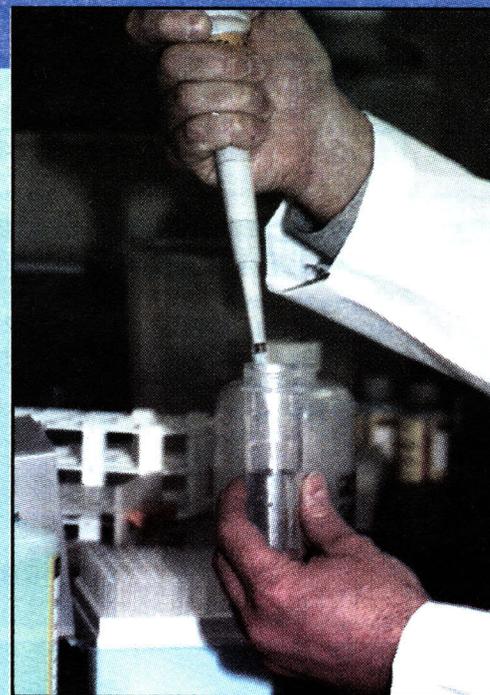
The Pennsylvania Department of Environmental Protection has waived requirements to test for the following elements as they are not expected to occur in drinking water in this area (although we still test for these periodically): nitrite, asbestos, dalapon, dinoseb, dioxin, diquat, endrin, glyphosate, hexachlorobenzene, 2,4-D, PCBs, toxaphene, 2,4,5-TP, heptachlor, heptachlor epoxide and vinyl chloride. Radon is waived, as it is associated with groundwater. Radium is tested for only if other radiological elements exceed an action level.

Unregulated Chemicals

In 2000, EPA revised the regulations for monitoring unregulated contaminants. The purpose of monitoring for unregulated contaminants in drinking water is to provide data to support the EPA's decision concerning whether or not to regulate these contaminants in the future.

In 2002, PWD completed monitoring under this revised unregulated contaminant monitoring regulation. The following contaminants were tested but not found at reportable levels: 2,4-dinitrotoluene, DCPA mono and DCPA di acid, 4,4'-DDE, EPTC, Molinate, MTBE, nitrobenzene, terbacil, acetochlor, and perchlorate.

In 2003, under the unregulated contaminant monitoring regulation, we successfully completed the compliance requirements of *Aeromonas* monitoring. Out of 18 samples, only one sample was detected for *Aeromonas*.



Safeguarding the water you drink.

In order to ensure that tap water is safe to drink, the Environmental Protection Agency has regulations which limit the amount of certain contaminants in water provided by water suppliers. The Food and Drug Administration establishes 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. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791) or from their website (<http://www.epa.gov/safewater>).

2003 DRINKING WATER QUALITY

Metals - Tested at Customers' Taps - Testing is done every 3 years. Last tests were done in 2002.

	EPA's Action Level for representative sampling of customer homes	Ideal Goal (EPA's MCLG)	90% of PWD customers' homes were less than	No. of homes considered to have elevated levels	Source
Lead	90% of homes must test less than 15 ppb	0	13 ppb	6 out of 63	Corrosion of household plumbing
Copper	90% of homes must test less than 1.3 ppm	1.3 ppm	0.3 ppm	0	Corrosion of household plumbing

Disinfection Byproducts in Tap Water

	Highest Level Allowed (EPA MCL) One Year Average	Baxter WTP One Year Average	Belmont WTP One Year Average	Queen Lane WTP One Year Average	Source
Total Trihalomethanes (TTHMs)	80 ppb	43 ppb Range of individual test results: 23 - 78 ppb	42 ppb Range of individual test results: 11 - 70 ppb	42 ppb Range of individual test results: 26 - 74 ppb	Byproduct of drinking water chlorination
Total Haloacetic Acids (THAAs)	60 ppb	42 ppb Range of individual test results: 30 - 56 ppb	35 ppb Range of individual test results: 24 - 64 ppb	28 ppb Range of individual test results: 8 - 57 ppb	Byproduct of drinking water chlorination

Total Organic Carbon

Treatment Technique One Year Average	Baxter WTP One Year Average	Belmont WTP One Year Average	Queen Lane WTP One Year Average	Source
Must be greater than or equal to 1	1.25	1.37	1.56	Naturally present in the water

Bacteria in Tap Water

	Level Allowed (EPA's MCL)	Ideal Goal (EPA's MCLG)	Highest Monthly Results	Source
Total Coliform Bacteria	Presence of coliform bacteria in 5% or less of more than 360 monthly samples	0	Highest % of positive samples: 0.95%	Naturally present in the environment. Their presence indicates potential contamination.

NOTE: One of the samples with Total Coliforms tested positive for E. Coli.

Other Chemicals in Tap Water -

PWD monitors annually although we are only required to report every nine years

	Highest Level Allowed (EPA's MCL)	Ideal Goal (EPA's MCLG)	Highest Result	Range of Test Results for the Year	Source
Nitrate	10 ppm	10 ppm	4.9 ppm	0.67 - 4.9	Fertilizer runoff, sewage
Barium	2 ppm	2 ppm	0.04 ppm	0.02 - 0.04	Metal refineries or natural deposits
Chromium	0.1 ppm	0.1 ppm	0.002 ppm	0.001 - 0.002	Discharge from steel and pulp mills; erosion of natural deposits

Clarity Characteristics - Tested at Water Treatment Plants

Turbidity (measure of clarity)	Baxter WTP	Belmont WTP	Queen Lane WTP	Source
Treatment Technique Requirement	95% of samples must be at or below 0.30 ntu	95% of samples must be at or below 0.30 ntu	95% of samples must be at or below 0.30 ntu	Soil runoff, river sediment
Highest Single Value for the year	0.100 ntu	0.092 ntu	0.070 ntu	Soil runoff, river sediment

NOTE: PWD achieved turbidity limits 100% at all times tested.

		Baxter WTP	Belmont WTP	Queen Lane WTP	
Hardness (as Calcium Carbonate)	Annual Average parts per million or grains per gallon	93 ppm or 5 grains	157 ppm or 9 grains	168 ppm or 10 grains	
	Annual Minimum parts per million or grains per gallon	73 ppm or 4 grains	127 ppm or 7 grains	137 ppm or 8 grains	
	Annual Maximum parts per million or grains per gallon	118 ppm or 7 grains	223 ppm or 13 grains	213 ppm or 12 grains	
Alkalinity (as Calcium Carbonate)	Annual Average	36 ppm	57 ppm	62 ppm	
	Annual Minimum	21 ppm	34 ppm	44 ppm	
	Annual Maximum	53 ppm	73 ppm	82 ppm	

Sodium in Tap Water

Chemical	Baxter WTP One Year Average	Belmont WTP One Year Average	Queen Lane WTP One Year Average
Sodium	16 ppm or 4 mg per 8 oz. glass of water	29 ppm or 7 mg per 8 oz. glass of water	39 ppm or 9 mg per 8 oz. glass of water
	Range of individual test results:	Range of individual test results:	Range of individual test results:
	7 - 36 ppm or 2 - 9 mg per 8 oz. glass of water	18 - 42 ppm or 4 - 10 mg per 8 oz. glass of water	21 - 72 ppm or 5 - 17 mg per 8 oz. glass of water

NOTE: We conducted monitoring for sodium throughout the year, although federal regulations do not require it.

Total Chlorine Residual – over 400 samples collected throughout the city every month

Total Chlorine in Tap Water	EPA Maximum Residual Disinfectant Level	One Year Average	Range of Highest Levels Detected at Taps
	4.0 ppm	1.73 ppm	1.7 - 2.9 ppm

Radioactive Contaminants

Radioactive Contaminants	Level Allowed (EPA's MCL)	Ideal Goal (EPA's MCLG)	Level Detected	Source
Gross Beta	50.0 pCi/L	0	5.78 pCi/L	Decay of natural and man-made deposits

EPA considers 50 pCi/L to be the level of concern for beta particles. During the period of 2001 and 2002, we tested two samples for gross alpha, gross beta, tritium, strontium 90 and uranium from two locations in our distribution system. One sample represented treated Delaware water and the other sample represented treated Schuylkill water. All results were below detection except a value of 5.78 pCi/L for gross beta for the treated Schuylkill water. This value is just above the EPA's method detection limit.

Volatile and Synthetic Organic Chemicals (VOC and SOC)

Chemical	Level Allowed (EPA's MCL)	Ideal Goal (EPA's MCLG)	Highest Result	Range of Test Results	Source
Alachlor	2 ppb	0	0.22 ppb	0 - 0.22 ppb	One sample from the Belmont plant was positive for Alachlor. It is runoff from herbicide used on row crops.
Ethylene dibromide	0.05 ppb	0 ppb	0.015 ppb	0.012 - 0.015 ppb	Samples from Belmont and Queen Lane were positive. It is discharged from petroleum refineries.
Hexachloro-cyclopentadiene	50 ppb	50 ppb	0.045 ppb	0.011 - 0.045 ppb	Samples from Baxter, Belmont and Queen Lane plants were positive. It is discharged from chemical factories.
Lindane	0.2 ppb	0.2 ppb	0.008 ppb	0 - 0.008 ppb	One sample from the Belmont plant was positive. It is runoff/leaching from insecticide used on cattle, lumber and gardens.

Listed above are our Drinking Water Quality Results for 2003. All results are better than the recommended federal levels designed to protect public health. We are pleased to report that we did not have any drinking water violations for 2003. In keeping with our long-standing unblemished record, we continue to be free of violations since the Safe Drinking Water Act was implemented thirty years ago.

By reporting these results in the tables above, we are meeting a requirement of the EPA. Please see the glossary for definitions of abbreviations used in the tables.

Some contaminants may pose a health risk at certain levels. Others, such as turbidity, have no health effects. For information about potential risks, please visit our website (<http://www.phila.gov/water>), or call us at 215-685-6300. We will be happy to mail them to you.

Glossary

Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow. The action level is not based on one sample; instead, it is based on many samples.

Alkalinity: A measure of the water's ability to resist changes in the pH level and a good indicator of overall water quality. Although there is no health risk from alkalinity, we monitor it to check our treatment process.

E. coli: Human and animal fecal waste.

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.

ntu - nephelometric turbidity units: Turbidity is measured with an instrument called a nephelometer. Measurements are given in nephelometric turbidity units.

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

ppb - part per billion: One part per billion is equivalent to one green apple in a barrel with 999,999,999 red apples.

ppm - part per million: One part per million is equivalent to one green apple in a barrel with 999,999 red apples.

SOC - Synthetic Organic Chemical: Organic compounds, such as pesticides and herbicides, that are commercially made.

Total Coliform: Coliforms are bacteria which are naturally present in the environment and are used as an indicator that other potentially harmful bacteria may be present.

THAAs - Total Haloacetic Acids: A group of chemicals called disinfection byproducts, which form during chlorination.

TOC - Total Organic Carbons: A measure of the carbon content of organic matter. The measure provides an indication of how much organic material in the water could potentially react with chlorine to form THAAs and TTHMs.

TTHMs - Total Trihalomethanes: A group of chemicals called disinfection byproducts, which form during chlorination. TTHMs form when natural organic matter in the rivers, such as leaves and algae, decompose and combine chemically with the chlorine added for disinfection. Levels of TTHMs vary seasonally.

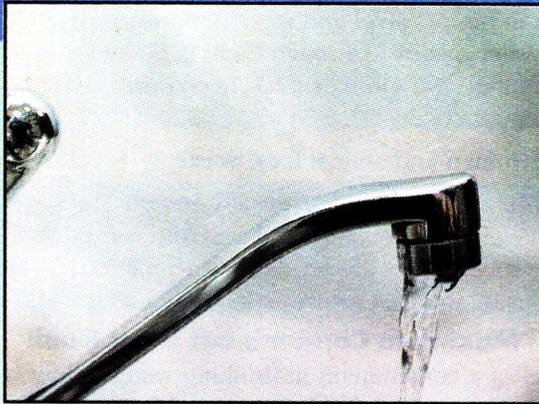
Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.

Turbidity: A measure of the clarity of water related to its particle content. Turbidity serves as an indicator for the effectiveness of the water treatment process. Low turbidity measurements, such as ours, show how we remove particles that cannot be seen by the human eye.

VOC - Volatile Organic Chemical: Organic compounds that include gases and volatile liquids.

WTP: Water Treatment Plant

Lead in Drinking Water



The Philadelphia Water Department has a permit with the Pennsylvania Department of Environmental Protection for operating under optimized corrosion control. Under this permit, the Water Department maintains the pH of water between 6.8 and 7.8 and maintains the amount of orthophosphate at greater than 0.12 mg/L as phosphorus. Water in our distribution system does not contain lead.

Lead in Your Home's Water Supply Plumbing System

It is important that you are aware of the possibility that faucets in your home may contain some percentage of lead materials that could leach into your drinking water. Infants and young children are typically more vulnerable to lead in drinking water than the general population. If parts of your home's plumbing system – such as faucets – contain lead, it is possible that lead levels in your home may be higher than levels in other homes in the community. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested. In the meantime, flush your tap for 30 seconds to two minutes before using tap water to get fresh water from the City's water mains. Additional information is available from the Environmental Protection Agency's Safe Drinking Water Hotline at 800-426-4791.

Research and Monitoring for *Cryptosporidium* and *Giardia*

Cryptosporidium and *Giardia* are microscopic organisms found in surface water throughout the U.S. They are found in animal wastes and sewage. They can be washed into rivers and streams when it rains. When ingested, they can result in diarrhea, fever, nausea and abdominal cramps. However, these are also symptoms of many intestinal diseases caused by bacteria, viruses or parasites. *Cryptosporidium* and *Giardia* cannot be diagnosed by symptoms alone. Most healthy individuals can overcome such illnesses within a few weeks. However, immuno-compromised people are at greater risk of developing life-threatening illness. We encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. *Cryptosporidium* must be ingested to cause disease, and it may be spread through means other than drinking water.

Most disease-causing organisms found in water can be eliminated by using chlorine. However, *Cryptosporidium* is resistant to chlorine. The best defense against these organisms is an effective water treatment process; most importantly, filtration. We look at turbidity to determine how well our filters are performing. Turbidity has no health effect. However, turbidity can interfere with disinfection and provide a medium for microbial growth. It may indicate the presence of disease-causing organisms. That's why it's important to us to ensure that our filters are working at their best.

Tiny particles – particles the same size as *Cryptosporidium* and smaller than particles visible to the human eye – are being successfully removed from our water.

The Philadelphia Water Department is one of the nation's leaders in *Cryptosporidium* research and was one of the first utilities in the U.S. to monitor for the organism. Continual research is being performed by us to discover better testing methods, to determine the sources of these parasites in our rivers, and to ensure that our treatment practices to protect our drinking water are working.

Testing Treated Water

In 2003, 34 tests were conducted on our treated drinking water, and two were positive for *Giardia* and none were positive for *Cryptosporidium*.

Testing Untreated River Water

Ninety-one (91) percent of the samples of untreated water taken from the rivers were positive for *Giardia* and only 39 percent were positive for *Cryptosporidium*. These tests were conducted on river water samples drawn at our plants' intakes before the water was treated. Intakes are the locations where we pump the river water to our settling reservoirs.

We are also working closely with the Philadelphia Department of Public Health to ensure that our tap water is free of pathogens that can be found in rivers.

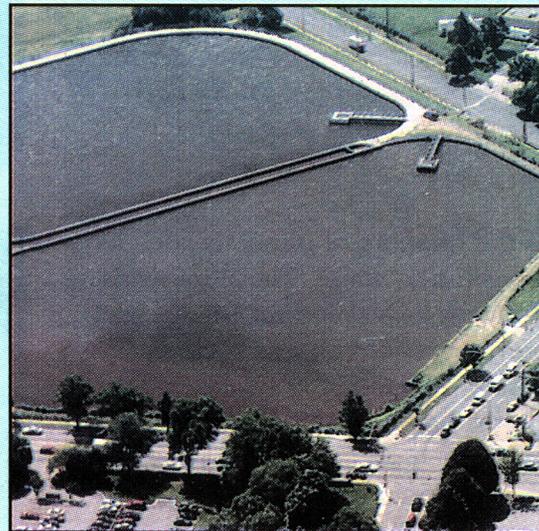
Partnership for Safe Water

In January 1996, the Philadelphia Water Department signed an agreement to join the national Partnership for Safe Water, a joint program of the EPA and the drinking water industry. Following Partnership guidelines, we are evaluating each of our treatment plant processes to identify further improvements in practices that are already far more rigorous than required by state or federal law.

For example, we have cut turbidity of the City's finished drinking water significantly. The Partnership for Safe Water program established a goal of less than 0.10 ntu (at all times tested), well below the State's regulatory standard of 0.30 ntu that became effective in January 2002. In 1996, we were already meeting this goal at all three of our treatment plants. By 1998, all three plants performed better than the goal set by the Partnership. Today, all three plants continue to lower their ntu levels, achieving a total annual average of 0.06 ntu, which means that we have successfully achieved the turbidity limits 100 percent of all times tested.

We presently produce drinking water that is eight to ten times better than the national and state standards for turbidity.

Through our participation in the Partnership for Safe Water, we have surveyed our treatment plants, treatment processes, operating and maintenance procedures, and management oversight practices to identify how we can make improvements to our water system. Many of the recommended improvements have already been made and we are continuing to implement others. These improvements have already helped to enhance our water system's ability to prevent *Cryptosporidium*, *Giardia* and other microbial contaminants from entering the treated water.



Interesting Facts About Philadelphia's Water

Fluoride

The Philadelphia City health code has required the Water Department to add fluoride to its treated water since 1954. Approximately one milligram per liter (mg/L), or one part per million (ppm), of fluoride is added, which is the amount recommended by the American Dental Association to provide maximum dental protection.

Hardness

Hardness defines the quantity of minerals such as calcium and magnesium in water. These minerals react with soap to form insoluble precipitates and can affect common household chores such as cooking and washing. Philadelphia's water is considered "medium" hard. Hardness also affects other water qualities such as its corrosiveness, with soft water being more corrosive.

Temperature

The temperature of both the Schuylkill and Delaware rivers varies seasonally from approximately 33° to 85° F. The Water Department does not treat the water for temperature.

Cloudy Water

Aeration is the process which takes place when the water flowing from your tap into your glass appears cloudy. This temporary condition is a result of dissolved air being released from the water and being temporarily suspended in the water in your glass. This most commonly happens in the winter time when the cold water in the water mains is warmed up quickly in household plumbing, thereby encouraging the dissolved air to come out of the water.

Important Telephone Numbers and Internet Addresses

Philadelphia Water Department
215-685-6300 <http://www.phila.gov/water>

Philadelphia Streets Department
215-686-5560 <http://www.phila.gov/streets>

**U.S. Environmental Protection Agency
(Safe Drinking Water Hotline)**
800-426-4791 <http://www.epa.gov/safewater>

Schuylkill River Source Water Assessment
<http://www.phillywater.org/schuylkill>

Fairmount Water Works Interpretive Center
215-685-0723
<http://www.fairmountwaterworks.org>

Schuylkill Action Network
<http://www.phillywater.org/SAN>

Clean Water Begins and Ends With You

Always recycle or dispose of unwanted household hazardous wastes properly. Don't pour motor oil, antifreeze or other toxic materials down storm drains. Water that enters our storm drains often flows directly to our local streams and rivers. So, don't pollute! Recycle these household hazardous materials safely and help protect our waterways. Also, don't flush paint thinners, insect sprays, herbicides and other harmful chemicals down the sink. Contact the Streets Department to get a schedule of their Household Hazardous Materials Drop-off Events where you can dispose of these materials safely without polluting your drinking water supply.

We Welcome Your Ideas and Opinions

We participate in nearly 200 public and community events a year, including presentations made at schools, ongoing educational programs, and other environmental celebrations.

We greatly benefit from our citizens advisory council which has been working with us over the last few years to improve our communications with our customers. Citizens representing business and industry, education, environmental advocacy, senior citizens, regulatory agencies and civic and community groups have assisted us in developing public information about a variety of topics, including drinking water quality and storm water pollution prevention. Interested citizens are welcome to attend our Water Quality Education Citizens Advisory Council meetings. Call our Hotline below to confirm the meeting dates, times and locations.

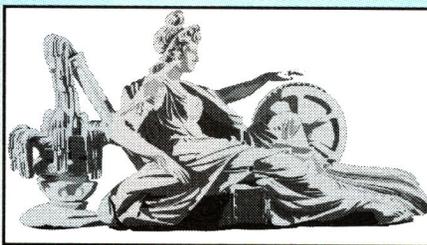
How to Contact Us

You can write to us at:
Philadelphia Water Department
ARAMark Tower
1101 Market Street, 3rd Floor
Philadelphia, PA 19107-2994

You can call our Customer Information Hotline at 215-685-6300.

WOW! Water in Our World

Our Fairmount Water Works Interpretive Center, which opened last year, is an exciting interactive experience for children and families. You can make it rain, learn what you have in common with elephants, visit Pollutionopolis (the most polluted town around), and more! The Interpretive Center is located near



the Art Museum, at 640 Water Works Drive. The hours are Tuesday through Saturday, 10:00 am to 5:00 pm, and Sunday from 1:00 pm to 5:00 pm. We are closed on city holidays. Admission is free. The Center is ADA accessible.

2003



Source Water Assessment

A Special Supplement to our 2003 Water Quality Report

Source Water Assessment and Protection Updates

As part of the requirements of the 1996 Safe Drinking Water Act Reauthorization, the Pennsylvania Department of Environmental Protection has been conducting assessments of all potentially significant sources of contamination to all public drinking water sources. The Philadelphia Water Department has prepared this information to support local and state efforts to protect the quality of the City of Philadelphia's drinking water sources. The information in this summary pertains to the water supply areas for the Philadelphia Water Department's Baxter, Belmont, and Queen Lane water treatment plants. This is an assessment of the raw (untreated river) water only. For water quality information on our treated "tap" water, please see our 2003 Water Quality Report.

Belmont and Queen Lane Water Treatment Plants

The Belmont and Queen Lane water treatment plants provide treated water that comes from the Schuylkill River in Fairmount Park. The State drinking water program through a source water assessment report has found that our water supply is potentially most susceptible to challenges caused by discharges of treated and untreated sewage upstream, polluted runoff from urban areas and agricultural lands, transportation accidents and spills, and acid mine drainage. Most of these potential sources are located watershed-wide, but acid mine drainage originates over 100 miles upriver near the source of the Schuylkill River in Schuylkill County. Much closer to Philadelphia, the Wissahickon Creek was identified as an area that requires special attention from potential sources of pollution due to its potential impacts on source water quality at the Queen Lane intake.

Historically, we have developed and maintained emergency response plans to address accidents and spills that could potentially impact the water supply. Recently, we established a Source Water Protection Program that is working with upstream partners such as watershed organizations, regulatory agencies, planning commissions, municipalities, water suppliers, and farmers to prevent declines in water quality throughout the entire 2,000 square-mile watershed to keep our water supply as clean as possible. It is important for us to work with these upstream organizations because their work has positive benefits for the water supply. If you would like to receive a copy of the source water assessment summary or would like to know how to get involved in

protecting your water supply or watershed, please call the Philadelphia Water Department at 215-685-6300, visit our website at www.phila.gov/water, or see Table 1 at the end of this section for more information.

Baxter Water Treatment Plant

The Baxter Water Treatment Plant, located in the Torresdale section of Philadelphia, provides treated water that comes from the Delaware River. The State drinking water program through a source water assessment report has found that our water supply is potentially most susceptible to challenges caused by discharges of treated and untreated sewage as well as polluted runoff between Camden and Trenton. Particular tributaries that require special attention to address polluted runoff from urban/residential areas and agricultural lands include the Pennypack Creek, Poquessing/Byberry Creek, Neshaminy Creek, Rancocas Creek, Lehigh River, and Musconetcong River. Historically, we have developed and maintained emergency response plans to address transportation accidents and spills along the Delaware River that could potentially impact the water supply, since it is a working river with barges, railroads, and many other transportation activities on or adjacent to it.

Historically, we have developed and maintained emergency response plans to address accidents and spills that could potentially impact the water supply. Recently, we established a Source Water Protection Program that is working with upstream partners such as watershed organizations, regulatory agencies, planning commissions, municipalities, water suppliers, and farmers to prevent declines in water quality throughout the entire 13,000 square-mile watershed to keep our water supply as clean as possible. It is important for us to work with these upstream organizations because their work has positive benefits for the water supply. If you would like to receive a copy of the source water assessment summary or would like to know how to get involved in protecting your water supply or watershed, please call the Philadelphia Water Department at 215-685-6300, visit our website at www.phila.gov/water, or see Table 1 at the end of this section for more information.

Moving from Assessment to Protection

With the Source Water Assessments completed, our award-winning Source Water Protection Program is moving from assessment to protection of our water supply, to prevent declines in water quality throughout the Schuylkill and Delaware watersheds. In addition, we are currently working with the Pennsylvania Department of Environmental Protection to develop Source Water Protection Plans for our water supplies and engaging in protection and restoration activities in parallel to our planning efforts.

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An example of our stakeholder success in 2003 is the formation of the Schuylkill Action Network (SAN). This is a partnership among the United States Environmental Protection Agency, Pennsylvania Department of Environmental Protection, the Philadelphia Water Department, and other organizations focused on working together to protect and restore the Schuylkill River as a premiere regional drinking water source, recreational resource, and natural habitat for fish and wildlife. To find out more about the SAN, please visit www.phillywater.org/SAN.

In conjunction with our stakeholder and planning efforts, we are continuing to implement on the ground restoration and protection projects locally and watershed-wide with a number of partners. These efforts include creating stormwater treatment wetlands, riparian buffers, and other management practices. Looking to the future, we have applied for a \$1.3 million dollar Watersheds Initiatives Grant to implement dozens of protection and restoration projects throughout the entire Schuylkill River Watershed between 2004 and 2007. This effort is being supported by over 50 partners, sponsored by the Pennsylvania Department of Environmental Protection, and endorsed by the Governor of Pennsylvania. We will be notified in fall 2004 if we receive this grant.

Getting Involved

If you would like to know how to get involved in protecting your water supply or watershed, please call the Philadelphia Water Department at 215-685-6300, visit our website at www.phila.gov/water, or see Table 1 on this page for more information.

TABLE 1: Who to Call to Report Various Situations

Situation	Who To Call	Phone
Dead Fish	Fish & Boat Commission	717-626-0228
	Fish & Boat Waterways Officer	717-587-0414
	PADEP	800-541-2050
Illegal Dumping & Related Pollution Activities	PADEP	800-541-2050
	Phila. Environmental Police Unit	215-686-3082
Sewage Spills	PADEP	484-250-5900
	PADEP	800-541-2050
	PWD	215-685-6300
Oil & Gas Spills/ Accidents	PADEP	484-250-5900
	PADEP	800-541-2050
	PWD	215-685-6300

TABLE 2 - Places To Go To Get Involved In Protecting Your Local Streams, Rivers, and Water Supply

Organization	Activity Types	Phone Number	Website Address
Friends of the Pennypack	A, C, E, P, T	215-934-PARK	http://balford.com/fopp
Friends of the Wissahickon	A, C, E, P, T	215-247-0417	http://www.fow.org
Friends of Fox Chase Farms	A, C, E, P	215-728-7900	http://www.foxchasefarm.org/Farm.htm
Friends of the Tacony	A, C, E, P, T	215-324-8942	http://www.nlreep.org/tacony.htm
Friends of the Manayunk Canal	A, C, E, P, T	215-483-9238	http://www.manayunkcanal.org
Schuylkill Environmental Education Center	A, B, C, E, P, T	215-482-7300	http://www.schuylkillcenter.org
Partnership for the Delaware Estuary	A, B, C, E, P, S, T	1-800-445-4935	http://www.delawareestuary.org
Environmental Alliance for Senior Involvement	A, C, E, P, T	540-788-3274	http://www.easi.org/index2.html
Schuylkill River Development Council	B, E, L	215-985-9393	http://www.srdc.net/schuylkill
Philadelphia Canoe Club	R, F, T	215-487-9674	http://www.philacanoec.org
Friends of Fairmount Fish Ladder	F	215-742-5112	email: epac99@aol.com
Cobbs Creek Environmental Education Center	A, C, E, P, T	215-685-1900	http://www.cobbscreek.org
Wissahickon Restoration Volunteers	A, C, E, P, T	215-342-8394	http://wissahickon.patrails.org
Wissahickon Valley Watershed Association	A, C, E, P, T	215-646-8866	http://www.wvwa.org
Lower Merion Conservancy	A, C, E, P, T	610-645-9030	http://www.lmconservancy.org
Philadelphia Water Department Water Quality Education Citizens Advisory Committee	A, E	215-685-6300	http://www.phila.gov/water

Activity Types

- A:** Environmental activism
- B:** Business related protection and education activities
- C:** Clean-up of trash and litter
- E:** Environmental education
- F:** Fishing or fish recreation activities
- L:** Land conservation and management
- P:** Planting trees and streambank repair/protection
- R:** Rowing, canoeing, and related boating activities
- S:** Storm drain marking
- T:** Water quality testing

WATER Wheel

Clean water begins and ends with you!

River Conservation Plans Issue/2004



Protecting our precious water resources involves everyone in our community!



Spiral Q Puppet Theatre, several AmeriCorps City Year Volunteers, and youngsters from the Centro Nueva Creacion after school program created two 12-foot-tall puppets of the watershed's new mascot, the Great Blue Heron. Each mascot visited six clean-up/restoration sites throughout the watershed.

YOUR WATERSHED IS YOUR NEIGHBOR'S, TOO

A watershed is the land surrounding a system of rivers (or streams or creeks), or a particular river, that, when it rains, sheds the runoff into the waterway for which it is named. Everything you do impacts your watershed. Runoff from garden fertilizers, hazardous substances like used motor oil, and trash dumped into one area of a river bank can pollute water many miles downstream. Protecting and maintaining our watersheds helps protect our water resources. Watersheds stretch beyond the limits of a city or neighborhood. You share your watershed with everyone else who lives in your watershed, even though they may live in a different part of the City or even in a suburban county.

A PLAN FOR PENNYPACK: Our Pennypack Creek River Conservation Plan

Two years ago we began developing the Tacony-Frankford River Conservation Plan for the Tookany/Tacony-Frankford Watershed. Now we are beginning work on the Pennypack Creek River Conservation Plan, a two-year project focused on the health of the Pennypack Creek Watershed. The watershed encompasses area in Bucks, Montgomery and Philadelphia counties, and drains 56 square miles of land that includes rural, suburban and dense urban use.

Our initial meeting in January, 2003, drew approximately 50 people who came to listen to our plans and contribute their own ideas. More recently, we held our first steering committee meeting on January 20, 2004 at the Pennypack Ecological Trust in Montgomery County. Steering Committee members began

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WATER Wheel

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brainstorming issues that they would like the plan to tackle, including flooding and stormwater management, municipal land use regulations, dam removal, public education, and working with specific groups such as landscapers, developers and golf course managers.

The funds for the plan were provided by the Pennsylvania Department of Conservation and Natural Resources, and the plan project is being managed by a partnership of the Philadelphia Water Department and the Fairmount Park Commission, the Pennypack Ecological Trust, the Friends of Pennypack Park, the Friends of Fox Chase Farms, and the Montgomery County Planning Commission. The partners selected F.X. Browne, Inc. as their River Conservation Plan consultant to manage the data collection and to assist with public outreach.

Are we protecting our river: use or misuse?

One of the goals of the Pennypack Creek River Conservation Plan, as with all of our watershed management plans, is to develop projects that will protect and improve water quality while creating attractive environments along the river banks and surrounding areas. In 1998, Fairmount Park Commission's Natural Lands Restoration and Environmental Education Program conducted a survey of Pennypack Creek Park in Philadelphia.

The survey discovered that all-terrain vehicles, deer overpopulation, certain plant species and conversion of forests to suburban lawns have all created environmental problems for the Park. The plant and animal life, both on land and in the river, was disturbed by development in the watershed. In Montgomery County, flooding and stormwater management issues have been recognized as causes for concern. By planning the proper use of the watershed, we can help preserve and restore this natural environment while protecting our water quality.

Become a part of the solution!

Future public meetings are in the planning stage, and we welcome your ideas and contributions to the Pennypack Creek Watershed Conservation Plan. Please contact us at 215-684-4944 or visit the Partnership's website at www.phillywater.org. Go to "Watershed Partnerships," for updates on events, meetings and reports.

TACONY-FRANKFORD RIVER CONSERVATION PLAN: Taking a Good Look at the River

Seen any white suckers or mummichogs lately? On July 12, 2003, the River Conservation Plan Team conducted a visual stream assessment training for volunteers who were willing to hike a quarter-mile length of Tacony Creek to photograph and to record on a data collection sheet such creek qualities as the look, smell, and depth of the stream as well as the conditions of the stream banks. Volunteers were also asked to identify wildlife – in the air, on the land, or in the water, and note if they recognized invasive plant species. A total of eight miles were inspected by volunteers by the end of the summer. Montgomery County completed a complementary assessment process on the Tookany section of the creek and its tributaries that pass through the county. By sharing assessments, we will be able to create a complete picture of the health of the creek both upstream and downstream.

RETURN OF THE BLUE HERON

On Saturday, May 17, 2003, the Watershed Partnership organized their first ever watershed festival. This event partnered with Philadelphia Cares about Fairmount Park Day, an annual clean up event. Under the artistic direction of the Spiral Q Puppet Theatre, several AmeriCorps City Year Volunteers worked with the youngsters from the Centro Nueva Creacion after school program to create two puppets of the watershed's new mascot, the Great Blue Heron. The mascots were constructed of fabric and paper mache, and stood over 12 feet tall. Each mascot visited six clean-up/restoration sites throughout the watershed. A community celebration and environmental fair followed at Ferko Playground.

TACONY-FRANKFORD RCP PLAN DRAFT PRESENTED

A draft of the Tacony-Frankford River Conservation Plan, which is near completion, was presented at a public meeting on February 18, 2004 at Friends Hospital. A meeting will be held in May 2004 to collect final public comments. To see a list of the goals identified to restore the environmental health of the watershed, go to www.phillywater.org. Select the link for Watershed Partnerships and chose Tookany/Tacony-Frankford Watershed Partnership or call 215-685-4944 for a copy or an update.