

WATER

QUALITY REPORT

To ensure that tap water is safe to drink, the EPA prescribes regulations which limit the amount of certain contaminants in public water systems.

The Environmental Protection Agency (EPA) requires the City of Wilmington, and all other water suppliers in the U.S., to report yearly on specific details about testing for a number of contaminants in our water. Chemical and biological monitoring provide the data that helps suppliers, such as the City of Wilmington, make key water quality management decisions to ensure freshness and purity.

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. To ensure that tap water is safe to drink, the EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulates bottled water, which must provide the same protection to the public's health.

More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (1-800-426-4791).

(Full report continues on page 3)



Volume 14 • Summer 2016

A newsletter
published by the
City of Wilmington,
Department of Public
Works Water Division

Water Works

BRANDYWINE HEADGATES AND RACEWAY RESTORATION

The historic Brandywine Headgates and Raceway were originally constructed over 200 years ago to serve the flour mills. The Raceway was converted for water supply purposes by the City of Wilmington in 1827. The Raceway feeds the Brandywine Membrane Plant and the Brandywine Pumping Station, which in turn provides source water to the Porter Water Plant. The Raceway is also a mile-long ribbon of tranquil water inviting runners and walkers to a very picturesque area of the City.

The Raceway, constructed of stone and mortar, required substantial and constant maintenance in its past state. The stone and rubble floor

of the Raceway was highly irregular and not conducive to maintenance and hydraulic conveyance. The walls of the Raceway were in disrepair, with loose stones falling away, even leaning at times and threatening to collapse. The degradation of the Raceway had allowed for significant water loss along its length (estimated at 30%) as well as water intrusion around the headgates when they are in the closed position, further complicating maintenance activities. *(Continued on page 8)*

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A Word from the Commissioner

The City of Wilmington continues to invest in its water infrastructure in order to provide a high level of service to its customers. One of our biggest projects completed this year was a major rehabilitation of the raceway in Brandywine Park. The raceway is more than 250 years old and conveys water to our Brandywine Filter Plant and pumping station before it is treated and distributed to our customers. While maintaining the historical esthetic qualities of the structure, we have improved the raceway's efficiency and extended the life of this beautiful landmark.

We also made a major investment in stormwater abatement in the City. Using creative, green infrastructure, improvements to the Porky Oliver Golf Course will reduce flooding on Greenhill Road. The golf course will be able to retain large amounts of stormwater on the property and reuse the stormwater to irrigate the course.

As most of you are aware, concerns about lead in drinking water across the country have been a prominent feature in news stories for the past six months. While the City has not had any lead safety issues in the past, we feel a proactive approach to identifying potential problems is the most prudent course of action. The City has embarked on a multi-year program of identifying and compiling an inventory of homes that have lead service lines. Our small meter replacement program coupled with our GIS capabilities will allow us to locate those lead service lines in the City. In addition, we are preparing information sheets for distribution to the public on steps that can be taken to minimize your exposure to lead in your drinking water.

We look forward to another great year of providing high quality water and water services.

Jeff Starkey, Commissioner,
Department of Public Works

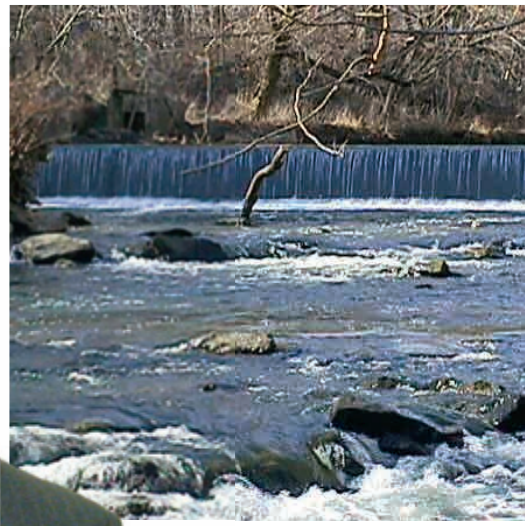


Source water...

The City of Wilmington developed the Source Water Protection Plan (SWP Plan) in order to better protect its water supply for future generations, reduce long term operating costs and carbon footprint, avoid future treatment requirements, improve planning and response to future spills and water quality events, and leverage upstream investments to protect its water supply.

Recognizing the efforts and input of the many dedicated stakeholders in the Brandywine Creek Watershed who have been involved with this SWP Plan is very important. The SWP Plan integrates a significant amount of information from their previous studies and plans. Without the involvement of these stakeholders and the benefit of their previous efforts, this plan would not have been possible.

You can download and read the SWP Plan at www.WilmingtonDE.gov/government/sourcewater. If you have any questions please contact Chris Oh, Water Quality Manager, at **(302) 573-5522**.



Contact Us

You can help us ensure the safety of our water supply by reporting any unusual or suspicious activity either on our waterways, near our reservoirs, water filtration plants, water towers or pumping stations.

To report an incident or general water quality concerns, call the City Call Center, **(302) 576-3878**.

If you have questions about this report, call the Water Quality Laboratory at **(302) 571-4158**.

Weekends or after 5 P.M. **(302) 571-4150**.

Violations

Due to a clerical error, the City of Wilmington collected water samples in April 2015 and May 2015 seven days earlier than the EPA-approved schedule, resulting in the City of Wilmington receiving a Notice of Noncompliance from the EPA dated August 5, 2015. The clerical error has been corrected and the situation is resolved. There were no potential adverse health effects to the public.

Last year, the City of Wilmington received a CCR reporting violation for failure to mail a copy of our CCR to the Delaware Office of Drinking Water by July 1, 2015. The violation was resolved on July 6, 2015. There were no potential adverse health effects to the public.

2015 Water Quality Report

How We Test Our Drinking Water

The Wilmington Water Division monitors for over 100 contaminants, including herbicides, pesticides, Cryptosporidia, Giardia and coliform bacteria. We collect samples from the Brandywine Creek, Hoopes Reservoir, Porter Reservoir, Cool Spring Reservoir, the filtration plants and at customers' taps in the distribution system.

Last year, over 30,000 water samples were drawn from the City's fresh water supply treatment plants and distribution system. Our laboratory performed over 70,000 water analyses on those samples. This data supports the conclusion that Wilmington's water system complies with all applicable EPA drinking water regulations.

During disinfection, certain byproducts form as a result of chemical reactions between chlorine and naturally occurring organic matter in water. These are carefully controlled to keep disinfection effective and byproduct levels low.

The state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, are more than one year old. If this is the case, the sample year will be noted in the report. 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. The City of Wilmington 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 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your 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 (**1-800-426-4791**), or at www.epa.gov/safewater/lead.

The Division of Public Health, in conjunction with the Department of Natural Resources and Environmental Control (DNREC), has conducted source water assessments for nearly all community water systems in the state. Contact the City at **(302) 573-5522** regarding the availability of the assessment and how you may obtain a copy. The assessment may also be viewed at this website: www.delawaresourcewater.org.



City of Wilmington
800 French St.
Wilmington, DE 19801

PWSID# DE0000663

June 1, 2016

Report Covers
Calendar Year 2015

Water System Contact
Chris Oh
Water Quality Manager
(302) 573-5522

Water Source:
Surface Water (Brandywine
Creek & Hoopes Reservoir)

Protecting the Public from Disease

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, and can pick up substances resulting from the presence of animals or from human activity.

Microbiological testing of water helps protect the public from waterborne diseases such as polio, diphtheria, typhoid and cholera. Chlorine is very effective at killing or disinfecting most of these organisms in drinking water. However, Cryptosporidium, a microbial pathogen found in surface waters throughout the U.S., is resistant to chlorine. Optimized water treatment, including filtration, provides an effective barrier against passage of Cryptosporidium into drinking water. One commonly used measure of this treatment effectiveness is turbidity removal. Turbidity is the cloudiness of the water that is caused by particles that are generally invisible to the naked eye. As shown in **Table 1** on **page 5**, the City continues to provide water that is well within State and Federal turbidity requirements.

The most commonly-used filtration methods, such as those used by Wilmington, cannot

guarantee 100 percent removal. The City of Wilmington began monitoring for Cryptosporidium in source water for its two plants beginning in November of 2005. Based on research conducted on the removal of Cryptosporidium by common filtration methods, the level detected in the source water should have been removed by the filters at the City’s treatment plant. Cryptosporidium has never been detected in the treated water supply.

Important Health Note for “At Risk” Populations

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

Regulating Contaminants

Contaminants that may be present in source water include: microbial contaminants, such as viruses and bacteria; inorganic contaminants, such as salts and metals, which can be naturally occurring; pesticides and herbicides; organic chemical contaminants; and radioactive contaminants. In order to ensure that tap water is safe to drink, the EPA prescribes regulations which limit the amount of certain contaminants in drinking water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.



Table 1: Water Quality Results - Detected Primary^[1] Parameters at ENTRY POINTS to Distribution System

				Brandywine Filter Plant			Porter Filter Plant			
Contaminant	Units	MCLG ^[2]	MCL ^[3] or TT ^{[4][5]}	Range of Levels Detected	Highest Detected Level	Violation	Range of Levels Detected	Highest Detected Level	Violation	Likely Source of Contamination
Microbiological Indicators - (2015 unless noted)										
Turbidity - Percentile	% of samples below 0.3	N/A	95% of monthly samples must be less than 0.3	100-100	100	No	100-100	100	No	Soil runoff
Turbidity - Values	NTU		No sample must ever exceed 1.0	0.011-0.061	0.061	No	0.02-0.10	0.100	No	Soil runoff
Inorganic Chemicals (Metals and Nutrients) - (2015 unless noted)										
Barium	ppm	2	2	0.0348-0.0348	0.0348	No	0.0414-0.0414	0.0414	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Nickel	ppb	N/A	100	1.5-1.5	1.5	No	2.0-2.0	2.0	No	Discharge from industrial sources; erosion of natural deposits
Chromium	ppb	100	100	1.0-1.0	1.0	No	1.9-1.9	1.9	No	Discharge from steel and pulp mills; Erosion of natural deposits
Fluoride	ppm	2	Delaware State MCL: 2 ppm ^[6]	0.1-1.1	1.10	No	0.38-1.40	1.40	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Nitrate	ppm	10	10	1.3-2.1	2.1	No	0.5-4.3	4.3	No	Runoff from fertilizer use; Leaching from septic tanks; Sewage; Erosion of natural deposits
Nitrite	ppm	1	1	0.002-0.011	0.011	No	0.002-0.035	0.035	No	Runoff from fertilizer use; Leaching from septic tanks; Sewage; Erosion of natural deposits
Synthetic Organic Chemicals (pesticides, defoliants, fuel additives) - (2014)										
Dalapon	ppb	200	200	0-1.1	1.1	No	-	-	-	Runoff from herbicide on rights of way.
Disinfectants - (2015 unless noted)										
Chlorine	ppm	N/A	At least 0.3 residual entering Distribution System	0.99-2.5	2.5	No	1.35-2.3	2.3	No	Water additive used to control microbes
Disinfection Byproduct Precursors - (2015 unless noted)										
Total Organic Carbon	ppm	N/A		0.63-3.09	3.09	N/A	0.65-2.09	2.09	N/A	Naturally present in the environment. Total organic carbon (TOC) has no health effects. However TOC provides a medium for the formation of disinfection byproducts.
Total Organic Carbon	% Removal (Raw to Treated)	N/A	Must exceed 35% (25% in certain instances)	34-49%	49%	No	27-70%	70%	No	
Total Organic Carbon	Compliance Ratio (rolling annual avg)	N/A	Ratio of Actual to Required Removal-must be greater than or equal to 1.	1.0-1.48	1.48	No	1.44-1.53	1.53	No	

Table 2: Water Quality Results - Detected Primary^[1] Parameters in Distribution System

Contaminant	Units	MCLG ^[2]	MCL ^[3] or TT ^{[4][5]}	Range of Levels Detected	Highest Detected Level	Violation	Likely Source of Contamination
Microbiological Indicators							
Total Coliform	% of samples positive each month	0%	5.0%	0-1.8	1.8	No	Bacteria that are naturally present in the environment. Used as an indicator of the presence of other potentially harmful bacteria.
Disinfectants							
Chlorine	ppm	MRDLG = 4.0 ^[9]	MRDL = 4.0 ^[8]	0.1-1.7	1.7 ^[10]	No	Water additive used to control microbes.
Disinfection Byproducts							
Total Trihalomethanes	ppb	No goal for the total	80	8.0-132 ^[7]	72 ^[11]	No	Byproduct of drinking water disinfection. Forms due to reaction of chlorine with total organic carbon. Health effects: Some people who drink water containing TTHMs in excess of the MCL over many years could experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.
Haloacetic Acids	ppb	No goal for the total	60	10.0-90 ^[7]	56 ^[11]	No	Byproduct of drinking water disinfection. Forms due to reaction of chlorine with total organic carbon.

Potential Contaminants

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 occur naturally 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 byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff and septic systems.

Radioactive Contaminants, which can occur naturally or as a result of oil and gas production and mining activities.

Table 3: Detection of Unregulated Contaminants^[12]

Chemical or Constituent	Units	Average	Range of Levels Detected	Likely Source of Contamination
Chromium 6+	ug/L	0.33	0.24-0.41	Naturally occurring from geological formations, aslo from manufacturing textile dyes, wood preservation, leather tanning & anti-corrosion coatings.
Chromium, Total	ug/L	0.46	0.38-0.54	Discharge from steel & pulp mills & chrome plating; erosion of natural deposits. Allergic dermatitis may occur in sensitive individuals who use water containing chromium in excess of the MCL over many years.
Strontium	ug/L	135	130-140	Found in rocks & soil, use of phosphate fertilizers.
Vanadium	ug/L	0.4	0.4-0.4	Naturally occurring metal; steel manufacture.
Molybdenum	ug/L	2.9	1.5-4.2	Naturally occurring element in ores & present in plants, animals & bacteria; used as a chemical reagent in the form molybdenum trioxide.
Chlorate	ug/L	382	270-500	Agricultural defoliant or desiccant; disinfection byproduct & used in the production of chlorine dioxide.
1,4-dioxane	ug/L	0.1	0.1-0.1	A clear liquid used as a solvent in the manufacture of chemicals.

Table 4: Radioactive Contaminants

Radioactive Contaminants - (2011 unless noted)	Highest Detected Level	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Beta/photon emitters	3.5	3.5-3.5	0	50 ^[13]	pCi/L	No	Decay of natural and man-made deposits.

Table 5: Secondary Parameters and Other Parameters of Interest Detected in Water as it Enters Distribution System

			Brandywine Filter Plant			Porter Filter Plant			
Contaminant	Units	SMCL ^[4]	Average	Lowest	Highest	Average	Lowest	Highest	Source
Conventional Physical and Chemical Parameters									
pH	units	6.5 - 8.5	7.4	6.8	7.9	7.3	6.8	7.8	Waters with pH = 7.0 are neutral
Alkalinity	ppm as CaCO ₃	N/A	54	36	70	51	31	77	Measure of buffering capcity of water or ability to neutralize an acid.
Hardness	ppm as CaCO ₃	N/A	117	71	160	124	88	156	Naturally occurring; Measures Calcium and Magnesium
Conductivity	µmhos/cm	N/A	408	242	1057	427	201	742	General measure of mineral content.
Sodium	ppm	N/A	25	25	25	22	22	22	Naturally occuring; Chemical additive to treat the water; Road salt application and run-off
Sulfate	ppm	250	18.5	18.5	18.5	16.8	16.8	16.8	Naturally occuring; Can cause objectionable taste and odor in water
Chloride	ppm	250	77	39	281	46	86	200	Naturally occurring; Chemical Additive to treat the water; Road salt application and run-off.
Metals									
Iron	ppb	300	<20	<20	<20	24	<20	38	Naturally occurring; Chemical Additive to treat the water; Corrosion of pipes; Can cause discoloration in water
Manganese	ppb	50	26	<6	105	15	6	91	Naturally occurring; can cause discoloration and objectionable taste in water
Zinc	ppm	5	0.10	0.05	0.18	0.10	0.0	0.4	Naturally occurring; Chemical Additive to treat the water

Table 6: Lead and Copper (based on 2014 sampling—testing is done every 3 years)

Contaminant	MCLG	Action Level (AL) ^[15]	90th Percentile	# Sites of AL	Units	Violation	Likely Source of Contamination
Copper	1.3	1.3	0.333	0	ppm	N	Erosion of natural deposits; leaching from wood preservatives; Corrosion of household plumbing systems
Lead	0	15	4.02	3	ppb	N	Corrosion of household plumbing systems; erosion of natural deposits

Key to Tables

- [1] Primary parameters are contaminants that are regulated by a maximum contaminant level (MCL), because above this level consumption may adversely affect the health of a consumer.

[2] MCLG - Maximum Contaminant Level Goal is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow no margin of safety.

[3] MCL - Maximum Contaminant Level 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.

[4] TT - Treatment Technique refers to the required process intended to reduce the level of a contaminant in drinking water. EPA's surface water treatment rules require systems to (1) disinfect their water and (2) filter their water such that the specific contaminant levels cited are met. Lead and copper are regulated by a Treatment Technique that requires systems to control the corrosiveness of their water. Total organic carbon is regulated by a Treatment Technique that requires systems operate with enhanced coagulation or enhanced softening to meet specified percent removals.

[5] Unless otherwise indicated value given is a MCL.

[6] State limit is to not exceed 2.0 mg/L.

[7] Cited average is the highest running annual average calculated from quarterly samples in 2015.

[8] MRDL - Maximum Residual Disinfectant Level is 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.

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

[10] Cited value is the lowest and/or highest average of a minimum of 100 routine samples per month.

[11] Cited value is the highest Locational Running Annual Average (LRAA). MCL is based on the LRAA, which is compiled to include data from previous quarters.

[12] Unregulated contaminant monitoring helps EPA to determine where certain contaminants occur and whether the Agency should consider regulating those contaminants in the future.

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

[14] SMCL: SMCL's are suggested guidelines related to aesthetics such as color or odor, which do not pose a risk to health.

[15] Action Level (AL): The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements which a water system must follow.

ppm: Milligrams per liter or parts per million - or one ounce in 7,350 gallons of water

ppb: Micrograms per liter or parts per billion - or one ounce in 7,350,000 gallons of water

ND: not detected



Brandywine Headgates and Raceway Restoration (Continued from cover)

As a critical component of Wilmington's water system, the City rehabilitated the Raceway channel and walls and installed new headgates. This process, began in the summer of 2015, and was completed spring 2016.

The Raceway restoration included the installation of a concrete liner, which will provide structural stability as well as reduce the loss of water along the length of the Raceway. These improvements are critical to the Raceway system especially during drought conditions.

The work completed did not alter the previous configuration of the Raceway. The construction activity was primarily conducted within the footprint of the existing channel. Regarding Raceway channel restoration, the portion of the work that extends above the water surface included restoring the stone masonry in line with the previous natural appearance of the Raceway. The portion of the work below the normal water level included a new concrete bottom that is structurally sound, leak-free, and

designed to improve the hydraulic conveyance of water along the entire Raceway. Some mature trees that impacted the structural stability of the Raceway channel were removed in the restoration process. For every tree removed, the City planted two trees.

The second component of the restoration involved installation of new headgates to control the flow of water from the Brandywine to the Raceway. Previously, the headgates were difficult to operate with confidence as the gates did not seal properly. The improvements provided fully functional gates, (to completely isolate the Brandywine Creek water from the Raceway) which will improve accuracy of control, reduce sediments traveling into the Raceway, and facilitate maintenance activities.

The improved headgates will also promote more water remaining in the Brandywine Creek, providing a stronger habitat to the flora and fauna that rely on this important eco-system daily, and preserving the natural state of a vital and scenic component of the region.

2015 Water Main Replacement

Cast iron water mains usually have a long service life, but due to different soil conditions, working pressure and other factors, they need to be periodically replaced, and sometimes increased in size to provide for a growing demand.

During 2015 The City of Wilmington Water Division replaced over 8,000 linear feet of small sized main with 8-inch ductile iron pipe. This will increase flow and improve water quality for the communities of Trolley Square/Delaware Ave, Forty Acres, 9th Ward Area/SouthEast 9th Ward, Little Italy and Southbridge.



Valve and Hydrant Condition Assessment Program

Fire hydrants are used for many purposes in a water system. Their main purpose is for firefighting. Fire hydrants spend most of their time unused and ignored, yet they are called upon in a moment's notice to provide water flow. In addition, they are used for flushing water mains to improve water quality.

Valves are designed to control, regulate, stop and start water flowing in the pipes. In emergencies, knowing the exact location and operability of the valves in the system is critical to shut down and isolate the affected section of main in the least amount of time.

An efficient water distribution system requires a program to inspect, test, and rehabilitate these integral parts of the distribution system. The City of Wilmington is currently in the midst of this program. This program is one of many ways Wilmington continues to supply our customers with the highest quality drinking water possible.

Lead FAQs

Many customers ask similar questions concerning lead in the City of Wilmington's drinking water. Some of the most frequently asked questions are answered below. If you have any further questions please contact the Water Quality Laboratory at (302) 571-4158.

Question 1: What is considered a safe level of lead in drinking water?

There is **no safe level** of lead in drinking water. The Lead and Copper Rule requires that 90% of the samples collected have a concentration of lead of less than 15 parts per billion (ppb). The 15 ppb is considered an Action Level, and the City's samples have never exceeded this Action Level (in 90% of the samples collected).

Question 2: What are the sources of lead in drinking water?

Sources of lead include old lead service lines, lead soldered joints in household plumbing, brass fixtures and fittings. The City's drinking water leaving the water treatment plants is not a source of lead. The City's water mains are not a source of lead. Most water mains are ductile iron or cast iron with a small amount of galvanized steel.

Question 3: What are some actions that the City has taken to minimize our water customer's exposure to lead in their drinking water?

- A corrosion inhibitor called Zinc Orthophosphate is added to the drinking water before the water leaves the treatment plant. The corrosion inhibitor coats the inside of the water mains and service lines with a protective layer to minimize the likelihood of lead leaching into drinking water.

- The City has always been in compliance with the EPA's Lead and Copper Rule and has always reported the sample test results to all customers participating.

- Free water tests for lead are, and have always been, available to customers upon request.

- If identified by the City in any of its main replacement projects, the City has removed the lead lines.

- The City has a limited rebate program to assist customers with the replacement of their service lines, whether it is lead or galvanized steel.

- As part of the City's multi-year program to replace small water meters, the City will be developing an inventory of the material of customer's water service lines.

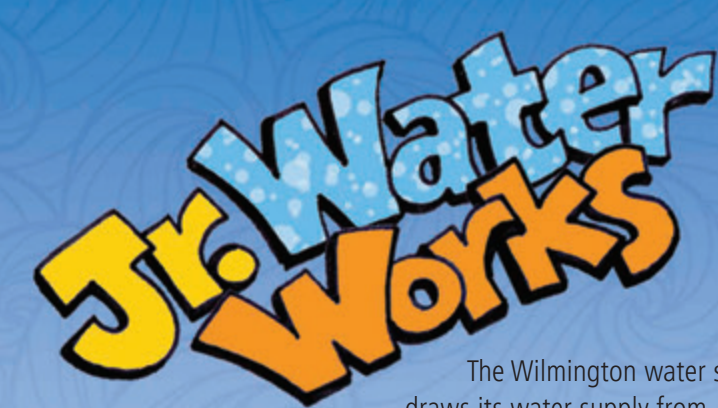
Question 4: How can homeowners reduce their risk to lead exposure in their drinking water?

- Use only cold water for drinking, cooking and making baby formula. Avoid consuming water from the hot water tap.
- Flush out the lines after a period of stagnation (especially overnight) in order to get fresh water from the mains. Generally running the water until it gets cold is sufficient.
- Periodically remove aerators from faucets that are used for drinking water and replace after removing sediment, rust or other particles that accumulate in the aerator screens.

Water Quality Problem?

The City of Wilmington is committed to providing you with high quality drinking water. We also understand that concerns may arise at your tap and we strive to address these quickly and efficiently. If you experience issues such as: low water pressure, rusty / discolored water, or unusual taste and smell, please call our call center at **(302) 576-3878**. You will be asked a series of questions regarding your concern and then the appropriate Water Department personnel will be contacted to address your problem. If you would like your water to be sampled, one of our Water Quality Specialists will call you to schedule a time that is convenient for you.





From Creek to Tap:

What happens to your water before it gets to your home?

The Wilmington water system draws its water supply from Brandywine Creek. Untreated river water enters a **Raceway** on the south side of Brandywine Creek through a head gate and flows through a screen house, removing floating debris, to **Brandywine Pumping Station**. From there it is sent to one of two filter plants, the **Brandywine Filter Plant**, which is directly adjacent to the pumping station or the **Porter Filter Plant**, a few miles to the north on Concord Pike.

At the filter plants the water is treated using these procedures: coagulation, where an agent is added that attracts tiny impurities which clump together; settling, which removes the now larger and heavier impurities that settle to the bottom where they can be separated from the water; and filtration, where the water passes through sand or membrane filters which remove the remaining impurities leaving clean potable (means safe to drink) water.

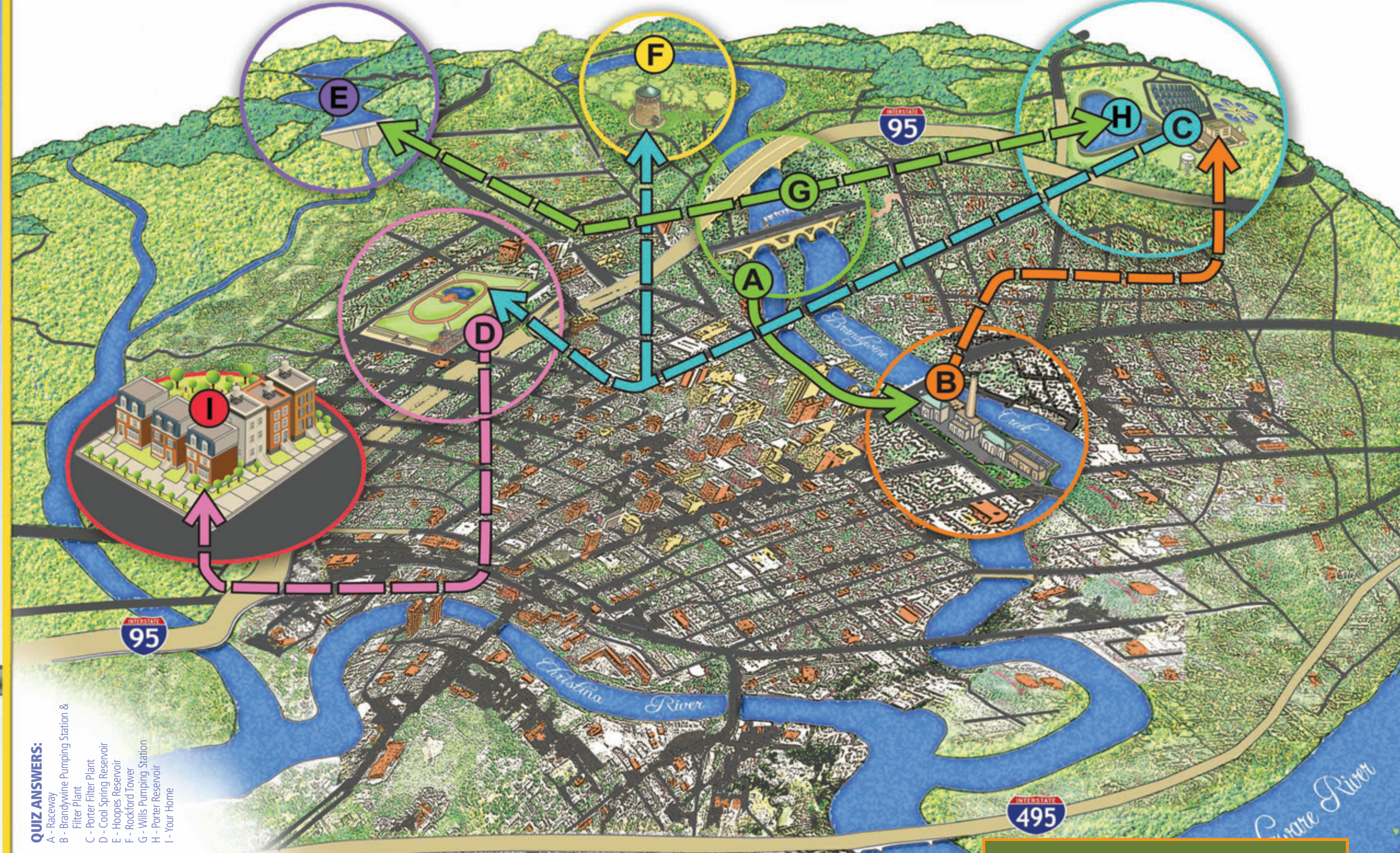
The water is then pumped from the filter plant through the underground mains to one of the water storage facilities (or can go directly into distribution to the homes and businesses of the City's customers). A water storage facility is a safe place to store water that is ready to be distributed to people who need it. Two examples of water storage facilities within the City are **Rockford Tower** and **Cool Spring Reservoir**.

But potable water is not the only kind that gets stored. In order to keep a healthy reserve of water to serve the City's water needs safely though any drought, untreated water is also pumped directly from the Brandywine Creek via **Wills Pumping**

Station, to the **Porter Reservoir** and the **Hoopes Reservoir** where it can be kept in reserve and pumped to the filter plants for treatment as needed.

Now that you are an expert on how water gets from the creek to your tap, let's test your knowledge. This illustration shows all of the water treatment facilities we just learned about. Each one has a letter next to it. See if you can match the letter to the correct facility name by drawing lines connecting them together. You can check your answers in the lower left corner of the illustration (no peeking!).

- A** Brandywine Pumping Station & Filter Plant
- B** Hoopes Reservoir
- C** Rockford Tower
- D** Raceway
- E** Porter Filter Plant
- F** Porter Reservoir
- G** Wills Pumping Station
- H** Your Home
- I** Cool Spring Reservoir



QUIZ ANSWERS:
A - Raceway
B - Brandywine Pumping Station & Filter Plant
C - Porter Filter Plant
D - Cool Spring Reservoir
E - Hoopes Reservoir
F - Rockford Tower
G - Wills Pumping Station
H - Porter Reservoir
I - Your Home

Water & Sewer Service Line Warranty Program

As a homeowner, you own the water and sewer lines that run through your property. Should any repairs be necessary to this part of the service lines, all costs would be the homeowner's responsibility, as homeowners insurance typically doesn't cover these repairs. Repairs can run into the thousands of dollars, which may place a financial burden on your shoulders. That's why the City of Wilmington has partnered with American Water Resources (AWR) to offer a water and sewer service line warranty program to City residents. This program will be rolled out in the near future. Keep an eye out in the mail for more information regarding enrolling in this program.



Jeffrey Starkey, Commissioner
Department of Public Works
Louis L. Redding City/County Bldg.
800 French Street, Wilmington, DE 19801-3537

Henry W. Supinski, City Treasurer

www.wilmingtonde.gov

An electronic version of this document is available at
www.ccrwilmingtonde.com.

Una versión en español de este documento está
disponible por correo, previa solicitud.



Upgrade Your Water Meter

It's time to upgrade your water meter free of charge!

The Department of Public Works is working with Itron, a company that specializes in automatic water meter readers, to upgrade the water meters at no cost to you. Itron Field Service Representatives (FSRs) will visit each property we service and will take no more than 30 minutes to complete the meter upgrade.

To make this process go as smoothly as possible, please clear the area around your water meter to give the FSR easy access. Allowing the City to make this upgrade will ensure you receive an accurate bill based on the amount of water used.

All City of Wilmington water customers are required to allow access for repair and maintenance of their water meters per Section 45-145 of the City Code: "The customer shall make provisions in all service pipes so that the meter can be located, placed and kept from all obstructions so as to afford easy access thereto, that it can be easily installed, read and inspected."

If you have any questions or want to verify that Itron is in your neighborhood, please call the customer service center at **1-877-861-0042**.

Dennis P. Williams, Mayor

CITY COUNCIL MEMBERS

The Honorable Theopolis K. Gregory, Sr.
President of City Council

The Honorable Nnamdi O. Chukwuocha
City Council Member, 1st District

The Honorable Ernest Congo II
City Council Member, 2nd District

The Honorable Darius J. Brown
City Council Member, 3rd District

The Honorable Hanifa G. N. Shabazz
City Council Member, 4th District

The Honorable Samuel Prado
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The Honorable Sherry Dorsey Walker
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The Honorable Robert A. Williams
City Council Member, 7th District

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City Council Member, 8th District

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City Council Member-at-Large

The Honorable Maria D. Cabrera
City Council Member-at-Large

The Honorable Loretta Walsh
City Council Member-at-Large

The Honorable Justen A. Wright
City Council Member-at-Large



Completed Raceway

In accordance with Title VI of the Civil Rights Act of 1964, state and federal law, "no person or group shall be excluded from participation, denied any benefits, or subjected to discrimination on the basis of race, color, national origin, age, sex, religion, handicap, and/or disability." General complaints or inquiries should be directed to: Affirmative Action Officer (302) 576-2460, and persons with disabilities may contact 504 Coordinator (302) 576-2460, City of Wilmington, Personnel Department, 4th Floor, 800 French Street, Wilmington, Delaware 19801. TDD is available at (302) 571-4546.

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