

# WARRINGTON TOWNSHIP WATER & SEWER DEPARTMENT



2009 WATER QUALITY REPORT  
PUBLIC WATER SYSTEM ID NUMBER 1090070

## INTRODUCTION



During 2009, the drinking water provided by Warrington Township's public water system once again EXCEEDED all State and Federal water quality standards.

This report presents a summary of the quality of the public drinking water provided by Warrington Township during 2009. We have included details about the sources of water, what it contains, and how the water quality compares to the standards set by the Pennsylvania Department of Environmental Protection (PADEP) and the Environmental Protection Agency (EPA) Safe Drinking Water Act (SDWA). The Warrington Township Board of Supervisors is committed to providing safe and reliable drinking water to our more than 7,350 customers. We feel that this information is important and that an informed customer is a public utility's best ally.

## WHERE DOES YOUR WATER COME FROM



The western portion of the Township, from Folly Road to Upper State Road, and the Bradford Greene development along County Line Road, is served water that the Township purchases directly from the North Wales Water Authority (NWWA). This portion of the Township is underlain by the Lockatong geological formation, which does not support the development of large production groundwater wells. The water purchased from NWWA is a surface water supply that comes from the Forest Park Water Treatment Plant located in Chalfont. The Forest Park Water Treatment Plant is a state of the art facility that treats and pumps water delivered from the Point Pleasant pump station located on the Delaware River. The treatment process at Forest Park consists of flocculation, sedimentation, filtration, and pre and post ozone disinfection.

The eastern portion of the Township, from Valley Road to Elbow Lane, is served water from nine wells drilled 300 to 760 feet deep into the Stockton geological formation. The wells are generally located along the Route 611 corridor that bisects the eastern part of the Township. The well water from four of the wells is treated using

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air strippers to remove organic contaminants. Chlorine is added at all the wells for disinfection prior to water entering the system.

The Township's eastern and western water systems are interconnected. The interconnection is controlled by a valve that allows water into the eastern end in the event of a fire or other emergency. The interconnection is also used as a supplemental source of supply during times of drought, or when the well supplies are out of service for maintenance reasons. Because of this, eastern end customers can expect to occasionally receive a commingling of water from the western surface supply and the eastern groundwater supply.

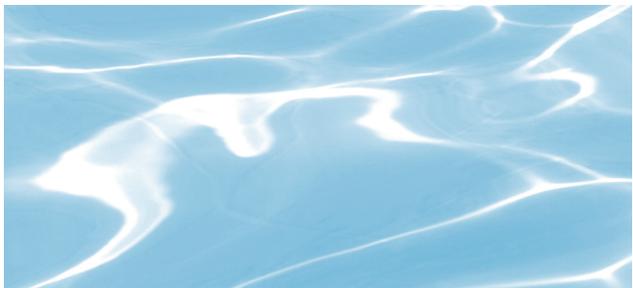


## WHY WE MONITOR YOUR DRINKING WATER



Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at 1-800-426-4791.

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.



## WHY WE MONITOR YOUR DRINKING WATER

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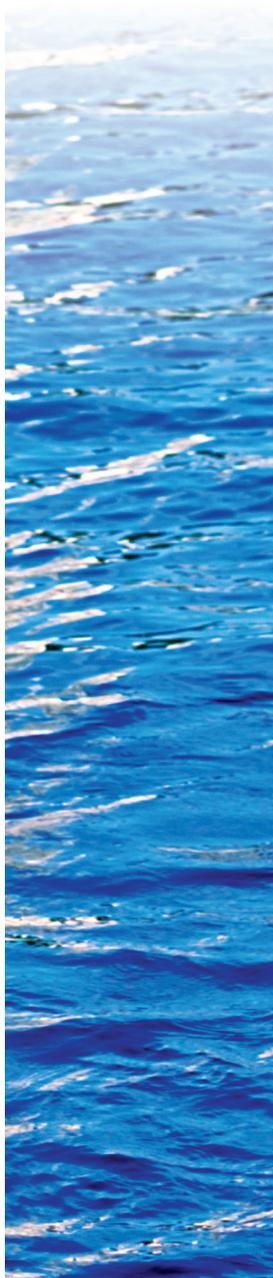
Contaminants that may be present in source water before it is treated include:

- **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 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 agricultural and residential uses.
- **Radioactive Contaminants**, which are naturally occurring.
- **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 runoff, and septic systems.

In order to ensure that tap water is safe to drink, the EPA and PADEP prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. We treat and monitor our water according to their regulations.



## OUR 2009 WATER MONITORING RESULTS



During 2009, Warrington Township conducted over 260 tests for 88 possible drinking water contaminants. Similar testing was also completed by NWWA and the Forest Park Treatment Plant. This arrangement results in duplication of testing, but also provides more quality control.

Tables 1 and 2 summarize the results of monitoring the Western and Eastern systems, respectively, for year 2009. Dozens of other contaminants that were tested for, but not detected, are not listed. Unless otherwise noted, the data presented in the tables is from testing done from January 1, 2009 to December 31, 2009. The PADEP requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of our data, though representative, are more than 1 year old.



## RELATED INFORMATION



In 2001, the Township participated in the Unregulated Contaminants Monitoring Rule (UCMR) Program in which suppliers began a 3-year monitoring period for unregulated contaminants, including the gasoline additive MTBE. The UCMR is designed to establish data for contaminants listed on EPA's Contaminate Candidate List for which EPA may establish future MCL's. Although the EPA does not regulate MTBE, the Township recognized the potential threat of MTBE and began voluntarily sampling for it prior to 2001 in each well and at various locations in both the eastern and western distribution systems. MTBE has never been detected in the Township's water supply.

Warrington Township also samples its water supply annually at all entry points to determine the level of Fluoride present. In 2009, NWWA sampling indicated a 0.02 ppm level of Fluoride present in their supply; well below the MCL. Fluoride can occur naturally due to erosion of natural deposits.

Related to our monitoring efforts, the Township has completed an assessment of the nine groundwater wells that supply the eastern distribution system. The study is part of Pennsylvania's Source Water Assessment and Protection (SWAP) Program. The assessment identified existing and potential sources of contamination located within a one-mile radius of each well and includes a detailed map showing the location of these sites within a half-mile radius of each well. The study will assist us in future land planning to protect our source groundwater supply. The report is available for review at the Warrington Township Water and Sewer Department Office at 852 Easton Road.



## EDUCATIONAL INFORMATION



While your drinking water meets EPA's standard for arsenic, it does contain low levels of arsenic. EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations, and is linked to other health effects such as skin damage and circulatory problems.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA and the Center 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 at 1-800-426-4791 or visit the EPA website at: [www.epa.gov/safewater/dwhealth](http://www.epa.gov/safewater/dwhealth).

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 minerals and components associated with service lines and home plumbing. Warrington Township 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 (800-427-4791) or at <http://www.epa.gov/safewater/lead>.

## DEFINITIONS AND ABBREVIATIONS



These are the definitions of the terms and abbreviations used in Tables 1 and 2 on the inside of this folder:

**MCL** (Maximum Contaminant Level): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLG's 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. MCLG's allow for a margin of safety.

**MRDL** (Maximum Residual Disinfectant Level): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

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

**n/d** (non detect): laboratory analysis indicates that the constituent is not present or below reporting limits.

**ppm** (parts per million): one part per million corresponds to one minute in two years or a single penny in \$10,000.

**ppb** (parts per billion): one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.



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## DEFINITIONS AND ABBREVIATIONS

(continued)



**pCi/l** (picocuries per liter): picocuries per liter is a measure of the radioactivity of water.

**NTU** (Nephelometric Turbidity Unit): nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

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

**TT** (Treatment Technique): a treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

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## FOR MORE INFORMATION



Warrington Township Water and Sewer Department is staffed with State-certified water operators who work to provide top quality water to every tap. Information about the Township's water system and a full 2009 Water Quality Report prepared by NWWA for their system is available for review at the Warrington Township Water and Sewer Department Office. For more information about your water quality, please log on to the Township's web site at [www.warringtontownship.org](http://www.warringtontownship.org) or contact the Warrington Township Water and Sewer Department Office at (215) 343-1800.

The Warrington Township Board of Supervisors meets the second and fourth Tuesday of each month at 7:30 p.m. in the Warrington Township Municipal Building at 852 Easton Road. These meetings allow the public to voice any concerns or comments they may have pertaining to the public water or sewer systems. Please feel free to participate in these meetings.

Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien.

TABLE 1 - WARRINGTON TOWNSHIP WESTERN SYSTEM 2009 WATER MONITORING

Substance (Unit of Measurement)	Violation YES/NO	Level Detected	Range Detected	MCL	MCLG	Likely source of substance
<b>Microbiological Contaminants:</b>						
Total Coliform Bacteria	NO	0	N/A	presence of coliform bacteria in 5% of monthly samples	0	Naturally present in the environment.
Fecal Coliform and E. Coli Bacteria	NO	0	N/A	a routine sample and repeat sample are total Coliform positive and one is also positive for fecal coliform or E. coli	0	Human and animal fecal waste
Turbidity (NTU)	NO	0.025	0.02 - 0.04	TT	N/A	Soil runoff.
Total Organic Carbon (percent removal)	NO	N/A	49.6 - 70.0%	TT	N/A	Naturally present in the environment.
<b>Disinfectants &amp; Disinfection By-products:</b>						
Chlorine Residual (ppm)	NO	0.41	0.10 - 1.31	MRDL=4	MRDLG=4	Water additive used for disinfection
THM (total trihalomethanes) (ppb)	NO	23.54	9.03 - 40.4	80	0	By-product of drinking water disinfection
HAA-5 (haloacetic acids five) (ppb)	NO	11.18	3.3 - 21.5	60	0	By-product of drinking water disinfection
Bromate (ppb)	NO	1.5	1.1 - 2.5	10	0	By-product of drinking water disinfection
<b>Inorganic Contaminants:</b>						
Barium (ppm)	NO	0.016	N/A	2	2	Erosion of natural deposits
Copper (ppm) 2007	NO	0.375	0 - 0.641	AL=1.3	1.3	Household plumbing systems
Flouride (ppm)	NO	0.021	0 - 0.063	4	4	Erosion of natural deposits
Lead (ppb) 2007	NO	0	0 - 0.004	AL=15	0	Household plumbing systems
Nickel (ppb)	NO	0.8	N/A	100	100	Erosion of natural deposits; industrial byproduct
Nitrate (as Nitrogen) (ppm)	NO	2.67	0 - 4.40	10	10	Runoff from fertilizer use.
<b>Synthetic Organic Contaminants:</b>						
	NO	27 constituents monitored in 2009 with none detected.				
<b>Volatile Organic Contaminants:</b>						
	NO	22 constituents monitored in 2009 with none detected.				
<b>Radioactive Contaminants:</b>						
Gross Alpha (adjusted) (pCi/l)	NO	3.09	2.36 - 3.82	15	0	Erosion of natural deposits
Combined Radium-226/228 (pCi/l) 2003	NO	0.763	0 - 1.99	5	0	Erosion of natural deposits
Uranium (ppb) 2003	NO	7.39	3.39 - 11.40	30	0	Erosion of natural deposits
<b>Unregulated Contaminant Monitoring Rule:</b>						
N-Nitrosodimethylamine (NDMA) (ppb)	NO	0.001	0 - 0.003	N/A	N/A	Byproduct of chemical synthesis and manufacture of rubber

Notes: 1. Monitoring results provided by NWMA unless otherwise noted. 2. All monitoring performed in 2009 unless otherwise noted. 3. Turbidity is a measure of the cloudiness of the water and is a good indicator of the effectiveness of the filtration system. 4. Copper and lead levels represent 90th percentile of homes tested.

TABLE 2 - WARRINGTON TOWNSHIP EASTERN SYSTEM 2009 WATER MONITORING

Substance (Unit of Measurement)	Violation YES/NO	Level Detected	Range Detected	MCL	MCLG	Likely source of substance
<b>Microbiological Contaminants:</b>						
Total Coliform Bacteria	NO	0	N/A	>1 positive monthly sample	0	Naturally present in the environment.
Fecal Coliform and E. coli Bacteria	NO	0www	N/A	a routine sample and repeat sample are Total Coliform positive and one is also positive for fecal coliform or E. coli	0	Human and animal fecal waste
<b>Disinfectants &amp; Disinfection By-products:</b>						
Chlorine Residual (ppm)	NO	0.30	n/d - 0.54	MRDL=4	MRDLG=4	Water additive used for disinfection.
HAA-5 (haloacetic acids five) (ppb)	NO	3.48	1.78 - 6.92	60	N/A	By-product of drinking water chlorination.
THM (total trihalomethanes) (ppb)	NO	18.98	13.39 - 24.44	80	N/A	By-product of drinking water chlorination.
<b>Inorganic Contaminants:</b>						
Arsenic (ppb)	NO	8.1	n/d- 8.1	50	N/A	Erosion of natural deposits.
Barium (ppm) 2003	NO	0.456	0.104 - 0.436	2	2	Erosion of natural deposits.
Chromium (ppb) 2003	NO	39	n/d - 39	100	100	Erosion of natural deposits.
Copper (ppm) 2008	NO	0.52	0.028 - 0.893	AL=1.3	1.3	Household plumbing systems
Lead (ppb) 2008	NO	4.5	0 - 86.8	AL=15	0	Household plumbing systems
Nitrate (as Nitrogen) (ppm)	NO	2.85	0.97 - 2.85	10	10	Runoff from fertilizer use.
<b>Synthetic Organic Contaminants:</b>						
4 constituents monitored in 2009 with none detected.						
<b>Volatile Organic Contaminants:</b>						
1,1-Dichloroethylene (ppb)	NO	0.59	n/d - 0.59	7	7	Discharge from industrial chemical factories.
Tetrachloroethylene (ppb)	NO	0.37	n/d - 0.37	5	0	Discharge from factories and cleaners.
THM (total trihalomethanes) (ppb)	NO	5.00	0 - 5.00	80	N/A	By-product of drinking water chlorination.
<b>Radioactive Contaminants:</b>						
Gross Alpha (pCi/L) 2008	NO	5.26	N/A	15	0	Erosion of natural deposits.
Gross Beta (pCi/L) 2006	NO	8.62	<1 - 8.62	50	0	Decay of natural deposits (See Note 3)
Combined Radium-226/228 (pCi/l) 2006	NO	1.59	0.41 - 2.05	5	0	Erosion of natural deposits.
Uranium (ppb) 2008	NO	16.2	10.3 - 16.2	30	0	Erosion of natural deposits.
<b>Unregulated Contaminant Monitoring Rule</b>						
10 constituents monitored in 2009 with none detected.						

Notes: 1. All monitoring results from Warrington Township system testing throughout the year 2009 unless otherwise noted. 2. Copper and lead levels represent 90th percentile of homes tested by Warrington Township. One sample exceeded the action level for lead, which was suspected to be a testing error. No samples exceeded the action level for copper. 3. EPA considers 5 pCi/L to be the level of concern for Beta particles.



Warrington Township  
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