



The Pittsburgh Water & Sewer Authority 2008 Annual Drinking Water Quality Report

PA Public Water Supply ID No. 5020038

Este informe contiene información muy importante sobre su agua de beber. Tradúzcalo ó hable con alguien que lo entienda bien. (This report contains very important information about your drinking water.

Translate it, or speak with someone who understands it.)

2008 Annual Drinking Water Quality Report

We are pleased to present to you The Pittsburgh Water and Sewer Authority's (PWSA) 2008 Annual Drinking Water Quality Report. This report is designed to inform you about the quality water and quality service we deliver to you every day. Our constant goal is to provide you with a high quality, dependable and ample supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and to protect our water resources. We are committed to ensuring the quality of your water. If you have any questions about the report, please contact Dr. Stanley States, PWSA Water Quality Manager at (412) 782-7553.

We want our valued customers to be informed about their water. The Water Quality Report and additional information are available on PWSA's web site: www.pgh2o.com. Additional copies may be obtained by calling the Communications Division at (412) 255-0767. To learn more about PWSA, please attend our regularly scheduled board meetings. They are held on the second Friday of every month at 9:30 a.m. in our downtown office at:

The Pittsburgh Water & Sewer Authority (PWSA)
Penn Liberty Plaza 1 • 1200 Penn Avenue • Pittsburgh, PA 15222
Phone: (412) 255-8800 Fax: (412) 255-2475 www.pgh2o.com

Special Information for Immuno-compromised Individuals

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 persons should seek advice about drinking water from their health care providers. Environmental Protection Agency (EPA) and 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 at 1-800-426-4791.

In General

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 or visiting the EPA's website at www.epa.gov/safewater.

Where does your water come from and how is it treated?

PWSA draws its water from the Allegheny River. No ground or well water is used. Approximately 70 million gallons of water are treated each day at our water treatment plant. The plant is capable of producing over 100 million gallons of water per day. The treatment process takes (3) full days and consists of (3) separate stages:

Stage 1- Clarification- River water passes through a process called "clarification," in which silts and clays are removed. This stage involves chemical formation of clumped particles called "floc," which then are physically removed by gravity sedimentation. **Stage 2- Filtration-** The clarified water next passes slowly through coal, sand and gravel filters in order to remove the fine particles and microorganisms. **Stage 3 - Disinfection-** The filtered water is finally treated with chlorine in order to ensure removal of any harmful microorganisms. During this process, several chemicals are added to complete treatment. These include activated carbon, which improves the taste of the water, and fluoride to prevent cavities in children's teeth.

Secondary Treatment of Reservoir Water

In addition to our primary water treatment plant located near Aspinwall, PWSA operates a secondary treatment plant in Highland Park. All of the water stored in the open-air Highland Reservoir #1 is originally treated in our primary plant. Then, before the Highland Reservoir #1 water is distributed to the public, it is retreated in our secondary plant. This membrane filtration plant utilizes state of the art microfiltration and chlorination to remove any impurities that may have entered the water during storage in the reservoir.

Source Water Protection

PWSA has worked with the Pennsylvania Department of Environmental Protection (PADEP) and the Allegheny County Health Department (ACHD) in preparing a Source Water Assessment Report for our source water, the Allegheny River. This report identifies the most likely sources of pollution affecting the river. These include accidental release of contaminants from industrial processes and terminals; cumulative impact of discharge from power plants; cumulative release of petroleum products from pipeline ruptures; storm water runoff from lands adjacent to the river; and Combined Sewer Overflows CSO's. A summary of the Source Water Assessment is available on the PADEP web site at www.dep.state.pa.us.

Who monitors and ensures the quality of water?

PWSA monitors for constituents in your drinking water (on a continuous basis– 365 days a year) in accordance with Federal and State regulations. Table #1 (which appears on page 3) shows the results of our monitoring of water being treated at the Aspinwall Water Treatment Plant for the period of January 1, 2008 to December 31, 2008. Table #2 (which appears on page 4) shows the results of our monitoring of water treated at the Highland Park Membrane Filtration Plant during the same period.

While we have conducted more than 100,000 analyses for approximately 100 different chemical and microbial constituents last year, we only found detectable levels of the contaminants listed in the water quality tables. **It should be noted that none of the test results exceeded federal or state maximum contaminant levels (MCLs).**

What does PWSA test for?

In general, the sources of all 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.

Contaminants that may be present in source or raw 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 by-products of industrial processes and petroleum production, can come from gas stations, urban storm water runoff and septic systems; and **Radioactive contaminants** - which can be naturally-occurring or the result of oil and gas production and mining activities.

In order to assure that tap water is safe to drink, The United States Environmental Protection Agency (EPA) and Pennsylvania Department of Environmental Protection (PADEP) prescribe regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) and PADEP regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

PWSA tests for contaminants that may be present in the source water prior to treatment. Results of the tests enable us to adjust the treatment process in order to maximize the reduction and the removal of contaminants. Tests are also conducted during the treatment process and on the finished water. Additional samples for testing are collected from our storage facilities, various points in the distribution network, and customers' taps.

Reporting Violations

In 2008, PWSA received a reporting violation involving a single routine measurement of river alkalinity. While the sample was collected and analyzed on time, the result was reported to the PA Department of Environmental Protection several weeks late. **This single reporting violation did not affect public health.**

Abbreviations and Definitions

In the Water Quality Tables, you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms, we have provided the following definitions:

ND:	Non-Detect – Laboratory analysis indicates that the contaminant is not present at a detectable level.
ppm or mg/L:	Parts Per Million or Milligrams Per Liter - One part per million corresponds to one minute in 2 years or a single penny in \$10,000.
ppb or µg/L:	Parts Per Billion or Micrograms Per Liter - One part per billion corresponds to one minute in 2000 years or a single penny in \$10,000,000.
NTU:	Nephelometric Turbidity Unit - Measurement 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 required process intended to reduce the level of a contaminant in drinking water.
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.
MCL:	Maximum Contaminant Level - The highest level of a contaminant that is allowed in drinking water. MLCs are set as close to the MCLGs as feasible, using the best available treatment technology.
MRDLG:	Maximum Residual Disinfectant Level Goal - The level of 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.
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.
NA:	Non-Applicable - Does not apply.
pCi/L:	Picocuries Per Liter - A measure of radioactivity in water.
Mrem/yr:	Millirems Per Year - A measure of radiation absorbed by the body.

2008 Water Quality Table
Table #1 Test Results for Regulated Contaminants (Aspinwall Treatment Plant)

Contaminant (Unit of measurement)	Violation Y/N	Level Detected	Range	MCLG	MCL	Likely Source of contamination
Microbiological Contaminants	N	0.14 (b) 100%	N/A N/A	N/A	TT= 1 NTU for a single measurement TT= at least 95% of Samples ≤ 0.3 NTU	Soil runoff
	N	0.47	0.30 to 0.73	(c) 4	(d) 4	Water additive used to control microbes
Disinfection Byproducts	N	0.36	0.36 to 1.34	(c) 4	(d) 4	Water additive used to control microbes
	N	68	23 to 149	N/A	80	Byproduct of drinking water chlorination
	N	19	11 to 29	N/A	60	Byproduct of drinking water disinfection
Lead and Copper	N	90 th percentile = 9	1 site above AL (50 sites sampled)	0	AL = 15	Corrosion of household plumbing systems; erosion of natural deposits
	N	90 th percentile = 0.1490	No sites above AL (50 sites sampled)	1.3	AL = 1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Inorganic Chemical Contaminants	N	7	< 2 to 7	10	0	Erosion of natural deposits; runoff from glass and electronics production waste
	N	1.46	0.10 to 1.46	2	2	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
TOC Removal	N	1.92	0.55 to 1.92	10	10	Runoff from fertilizers; leaching from sew- age; natural deposits
	N	One quarter out of compliance	33 to 49	NA	TT = 35%	Naturally present in the environment

Footnotes: (a) Turbidity is a measure of the cloudiness of water. We monitor it because it is a good indicator of the effectiveness of our filtration system. (b) All turbidity samples met the turbidity limit of 0.3NTU. (c) MRDLG. (d) MRDL. (e) Data from 2007. (f) Adequate removal of TOC may be necessary to control unwanted formation of disinfection byproducts.

Should you be concerned about lead?

Infants and young children are typically more vulnerable to lead in drinking water than the general population. Always use cold water for cooking, drinking, and making baby formula. It is possible that lead levels in your home may be higher than in other homes in the community as a result of materials used in your home's plumbing. It is important to point out that the use of lead solders or pipes in drinking water plumbing systems is illegal. Never use lead solders when repairing water lines. If you are concerned about elevated lead levels in your home's water and would like to have your water tested for lead, free of charge, please call PWSA at (412) 782-7554. Additional information is available at the EPA's Safe Drinking Water Hotline at 1-800-426-4791.

2008 Water Quality Table

Table #2 Test Results for Regulated Contaminants (Highland Park Membrane Filtration Plant)

	Contaminant (Unit of Measure)	Violation Y/N	Level Detected	Range	MCLG	MCL	Likely Source of Contamination
Microbiological Contaminants	Turbidity (a)	N	0.10 (b) 100%	N/A N/A	N/A	TT= 1 NTU for a single measurement TT= at least 95% of Samples ≤ 0.3 NTU	Soil runoff
	Free Chlorine Residual at Entry Point to Distribution system	N	0.28	0.28 to 2.14	(c) 4	(d) 4	Water additive used to control microbes
Radioactive Contaminants	Alpha Photon Emitters (pCi/L) (e)	N	4.9	0 to 4.9	0	15	Erosion of natural deposits
	Beta Photon Emitters (pCi/L) (e)	N	8.2	4.5 to 8.2	0	(f) 50	Decay of natural and man-made products
	Combined Radium (pCi/L) (e)	N	1.2	0 to 1.2	0	5	Erosion of natural deposits
Inorganic Chemical Contaminants	Barium (ppm) (g)	N	0.050	(h)	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural debris
	Beryllium (ppb) (g)	N	0.3	(h)	4	4	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace and defense industries
	Chromium (ppb) (g)	N	1.0	(h)	100	100	Discharge from steel and pulp mills; erosion of natural deposits
	Fluoride (ppm) (g)	N	1.07	(h)	2	2	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
	Nitrate (ppm)	N	1.89	0.37 to 1.89	10	10	Runoff from fertilizers; leaching from sewage; natural deposits

Footnotes: (a) Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system. (b) All turbidity samples met the turbidity limit of 0.3NTU. (c) MRDLG. (d) MRDL. (e) Data from 2005. 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. (f) USEPA considers 50 pCi/L to be the level of concern for beta particles. (g) Data from 2007 (h) Only one sample required.

What does the test result information mean?

As you can see in Tables 1 & 2, our system had no water quality violations. We are proud that your drinking water meets or exceeds all Federal and State requirements. We have learned through our monitoring and testing that some constituents have been detected.

Unregulated Contaminant Monitoring (UCMR) In 2008

Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated monitoring is to assist EPA in determining the occurrence of contaminants in drinking water and whether future regulation is warranted. During 2008, PWSA, along with many other utilities across the country, was required to monitor for 25 contaminants on a quarterly basis. None of these contaminants, which included pesticides and industrial compounds, were detected in Pittsburgh's drinking water.

Cryptosporidium Monitoring

Cryptosporidium is a microbial pathogen found in surface waters throughout the United States. Although treatment plant filtration removes cryptosporidium, the most commonly used filtration methods cannot guarantee 100% removal. Ingestion of cryptosporidium may cause cryptosporidiosis, an abdominal infection. Symptoms include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks.

The USEPA has required all large water utilities to monitor their untreated source water over a two year period for the presence of cryptosporidium. Unfortunately, the currently available test methods do not allow us to determine if the organisms are alive or capable of causing disease. Our testing indicated the presence of very low numbers of cryptosporidium in several of our 24 monthly Allegheny River source water samples. Based on this small number of detections, no additional drinking water treatment will be required by the new EPA regulations.