



# The Pittsburgh Water & Sewer Authority 2011 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.)**

## 2011 Annual Drinking Water Quality Report

We are pleased to present to you The Pittsburgh Water and Sewer Authority's (PWSA) 2011 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, Director of Water Quality and Production 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](http://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 Strip District 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 Web: [www.pgh2o.com](http://www.pgh2o.com)**

The Pittsburgh Water and Sewer Authority (PWSA) currently serves 113,000 sewage connections and 83,000 drinking water service connections, making PWSA the largest combined water and sewer authority in the state. In addition, PWSA also provides bulk water sales to Reserve Township, Fox Chapel Borough, and Aspinwall Borough along with being interconnected to several other regional water systems. The Water Treatment Plant produces an average of 70 MGD (millions of gallons of water per day). The PWSA drinking water system contains 930 miles of water lines, 5 reservoirs, and 11 tanks with a storage capacity of 455 million gallons of water. The PWSA sewer system contains 1,100 miles of sewer lines and four booster pumping stations. PWSA provides water and wastewater services that meet or exceed regulations and customer expectations at the lowest possible cost.

## 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.**

## 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 drinking 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 the addition of treatment chemicals (coagulants) which form clumped particles called “floc,” which are then physically removed by gravity sedimentation. During this phase the water is also treated with powdered activated carbon to improve the taste.

**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 treated with chlorine in order to ensure removal of any harmful microorganisms. During this process, several additional chemicals are added to complete treatment. These include sodium carbonate to adjust the pH 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 re-treated 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; 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](http://www.dep.state.pa.us).

PWSA has recently developed a formal Source Water Protection Program in cooperation with the PADEP. The purpose of the program is to increase regional awareness of potential river contamination issues and decrease response time in the event of a contaminant spill or other emergency.

Stormwater pollution DOES affect water quality. PWSA draws water from the Allegheny river. Anything that enters the storm sewer is ultimately released, untreated, into the rivers and streams. In addition to the Allegheny River being used as the source of our drinking water, it is also used for swimming, boating and fishing. The PWSA system is made up of sanitary, dedicated stormwater, and combined sewers. All new development is required to have separate storm sewers, Municipal Separate Storm Sewer Systems, known as MS4's.

Residents can help prevent stormwater pollution by doing the following: **Dispose of trash properly.** Don’t Litter. You can help reduce cost and keep our rivers clean by properly disposing of waste. **Consider the location where you wash your car.** If you’re washing your car in the driveway, all the soap is going into the street, entering the storm sewer and eventually ending up in the river. **Properly dispose of dog doo.** If pet waste is not properly disposed of during rain events, the bacteria will enter storm sewers and eventually end up in the river. **Use fertilizer sparingly.** During rain events, fertilizer runs down the street, enters the storm sewers and eventually ends up in the river. Don’t fertilize before a rain storm. **Stop oil leaks immediately.** Leaking oil runs down the street, enters the storm sewers and eventually ends up in the river. Check for oil leaks regularly and dispose of oil properly.

## 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 shows the results of our monitoring of water being treated at the Highland Park Membrane Filtration Plant for the period of January 1, 2011 to December 31, 2011. Table #2 shows the results of our monitoring of water treated at the Aspinwall Water Treatment 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 stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.

**Pesticides and herbicides** - which may come from a variety of sources, such as agriculture, urban stormwater runoff and residential uses.

**Organic chemical contaminants** - including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, can come from gas stations, urban stormwater runoff and septic systems.

**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 (USEPA) and Pennsylvania Department of Environmental Protection (PADEP) regulate the amount of certain contaminants in water provided by public water systems. The 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 removal of contaminants. Tests are also conducted during the treatment process and on the finished water. Additional samples for testing are collected on a regular basis from our storage facilities, various points in the distribution network and customers' taps.

## Public Notification

PWSA has recently developed an enhanced Public Notification System. In the event of a drinking water emergency, our customers will be notified by phone of the emergency and of any precautionary measures that should be taken. This is in addition to notification by TV and radio. PWSA encourages all customers to provide updated contact information by going to our website at [www.pgh2o.com](http://www.pgh2o.com) or by calling Customer Service at 412-255-8800. This information ensures that we are able to make direct contact in the event of an emergency.

**2011 Water Quality Table**  
**Table #1 Test Results for Regulated Contaminants**  
**(Highland Park Membrane Filtration Plant)**

|                                    | Contaminant<br>(Unit of Measure)  | Violation<br>Y/N | Level<br>Detected | Range           | MCLG    | MCL   | Likely Source of<br>Contamination  |
|------------------------------------|---|------------------|-------------------|-----------------|---------|---|--|
| Microbiological<br>Contaminants    | Turbidity (a)   | N                | 0.095<br>(b) 100% | N/A             | N/A     | TT = 1 NTU for a<br>single measurement<br>TT = at least 95% of<br>samples ≤ 0.3 NTU | Soil runoff  |
|                                    | Free Chlorine Residual<br>at Entry Point to<br>Distribution system<br>(ppm) | N                | (c) 0.20          | 0.2 to<br>0.69  | (d) 0.2 | (d) 0.2   | Water additive used to control<br>microbes   |
| Inorganic Chemical<br>Contaminants | Chromium (ppb)  | N                | 1.0               | (e)             | 100     | 100   | Discharge from steel and pulp<br>mills; erosion of natural<br>deposits   |
|                                    | Fluoride (ppm)  | N                | 0.72              | (e)             | 2       | 2   | Erosion of natural deposits;<br>water additive which promotes<br>strong teeth; discharge from<br>fertilizer and aluminum factories |
|                                    | Nitrate (ppm)   | N                | 1.73              | 0.38 to<br>1.73 | 10      | 10  | Runoff from fertilizers; leaching<br>from sewage; natural deposits   |
|                                    | Barium (ppm)  | N                | 0.033             | (e)             | 2       | 2   | Discharge of drilling wastes;<br>discharge from metal refineries;<br>erosion of natural debris                                     |

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 0.3 NTU. (c) Lowest concentration of free chlorine detected. (d) Minimum allowable free chlorine residual at entry point to the distribution system. (e) 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.

### Should you be concerned about lead?

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 Pittsburgh Water and Sewer Authority is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components in your home. 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 are now available from the Safe Drinking Water Hotline or at [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead). If you would like to have your water tested for lead, free of charge, please call PWSA at (412) 782-7554.

### 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](http://www.epa.gov/safewater).

**2011 Water Quality Table**  
**Table #2 Test Results for Regulated Contaminants**  
**(Aspinwall Treatment Plant)**

| Contaminant<br>(Unit of measurement) | Violation<br>Y/N  | Level<br>Detected          | Range                                      | MCLG  | MCL   | Likely Source of<br>contamination   |
|--------------------------------------|---|----------------------------|--|-------|---|---|
| Microbiological<br>Contaminants      | Turbidity (a)   | 0.11<br>(b) 100%           | N/A  | N/A   | TT = 1 NTU for a<br>single measurement<br>TT = at least 95% of<br>Samples ≤ 0.3 NTU | Soil runoff   |
|                                      | Total Chlorine Residual in<br>Distribution System (ppm)               | 0.60                       | 0.29 to 0.60                               | (c) 4 | (d) 4   | Water additive used to control microbes   |
|                                      | Free Chlorine Residual at Entry<br>Point to Distribution System (ppm) | (e) 0.26                   | 0.26 to 0.69                               | —     | (f) 0.2   | Water additive used to control microbes   |
| Disinfection<br>Byproducts           | Total Trihalomethanes (ppb)   | 66                         | 18 to 106                                  | N/A   | 80  | Byproduct of drinking water chlorination  |
|                                      | Total Haloacetic Acids (ppb)  | 17                         | 6 to 32                                    | N/A   | 60  | Byproduct of drinking water disinfection  |
| Lead and Copper                      | Lead (ppb) (g)  | 90th percentile<br>= 10    | 2 sites above<br>AL (50 sites<br>sampled)  | 0     | AL = 15   | Corrosion of household plumbing systems;<br>erosion of natural deposits   |
|                                      | Copper (ppm) (g)  | 90th percentile<br>= 0.082 | No sites above<br>AL (50 sites<br>sampled) | 1.3   | AL = 1.3  | Corrosion of household plumbing systems;<br>erosion of natural deposits; leaching from<br>wood preservatives                    |
| Inorganic<br>Chemical                | Chromium (ppb)  | 1                          | <1 to 1                                    | 100   | 100   | Discharge from steel and pulp mills   |
|                                      | Fluoride (ppb)  | 1.65                       | 0.07 to 1.65                               | 2     | 2   | Erosion of natural deposits; water additive<br>which promotes strong teeth; discharge<br>from fertilizer and aluminum factories |
|                                      | Nitrate (ppm)   | 1.63                       | 0.46 to 1.63                               | 10    | 10  | Runoff from fertilizers; leaching from<br>sewage; natural deposits  |
|                                      | Barium (ppm)  | 0.027                      | (h)  | 2     | 2   | Discharge of drilling wastes; discharge<br>from metal refineries; erosion of natural<br>deposits                                |

| Contaminant<br>(Unit of measurement)          | Violation<br>Y/N | Level<br>Detected               | Range      | MCLG | MCL      | Likely Source of<br>contamination    |
|---|------------------|---------------------------------|------------|------|----------|--------------------------------------|
| TOC<br>Removal                                |                  |                                 |            |      |          |                                      |
| Total Organic Carbon (TOC)<br>(% removal) (i) | N                | No quarter out<br>of compliance | 37 to 53   | N/A  | TT = 35% | Naturally present in the environment |
| Uranium (pCi/L)                               | N                | 1.77                            | ND to 1.77 | 0    | 30       | Erosion of natural deposits          |
| Combined Radium (pCi/L)                       | N                | 3.1                             | ND to 3.1  | 0    | 5        | Erosion of natural deposits          |
| Beta Photon Emitters (pCi/L)                  | N                | 39.6                            | ND to 39.6 | 0    | (j) 50   | Decay of natural man-made deposits   |

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 0.3 NTU. (c) MRDLG. (d) MRDL. (e) Lowest of free chlorine detected. (f) Minimum allowable free chlorine residual at entry point to the distribution system. (g) Data from 2010. (h) Only one sample required. (i) Adequate removal of TOC may be necessary to control unwanted formation of disinfection byproducts. (j) USEPA considers 50 pCi/L to be the level of concern for beta particles.

## Abbreviations and 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 becomes just barely 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.