



ANNUAL  
WATER  
QUALITY  
REPORT

*Water testing performed in 2008*



CITY OF IRONTON



PWS ID#: OH4400711

## Meeting the Challenge

We are once again proud to present to you our annual water quality report. This edition covers all testing completed from January 1 through December 31, 2008. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal drinking water standards. We continually strive to adopt new and better methods for delivering the best quality drinking water to you. As new challenges to drinking water safety emerge, we remain vigilant in meeting the challenges of source water protection, water conservation, and community education while continuing to serve the needs of all our water users.

Please share with us your thoughts about the information in this report. After all, well-informed customers are our best allies.



Rich Blankenship, Mayor

## Where Does My Water Come From?

The City of Ironton Water Company customers are fortunate because they enjoy an abundant water supply from the Ohio River. The city treats this surface water through pre-sedimentation, upflow clarification, filtration, and chlorination. The Ironton Water Treatment Plant was constructed in 1993 with an approved capacity of 4 million gallons per day. Our treatment facilities provide roughly 1.9 million gallons of clean drinking water every day.

## Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) 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 (800) 426-4791.

## Community Participation

You are invited to participate in our public forum and voice your concerns about your drinking water. We meet beginning at 6 p.m. on the second and fourth Thursday of each month at City Center, Council Chambers, 301 South Third Street, Ironton, Ohio 45638.

## Lead and Drinking Water

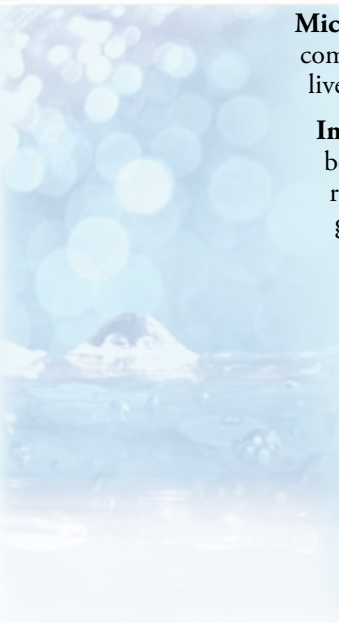
If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. We are responsible for providing high-quality drinking water, but 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 or at [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).



## Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk.

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, in some cases radioactive material, and substances resulting from the presence of animals or from human activity. Substances that may be present in source water include:



**Microbial Contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, or wildlife;

**Inorganic Contaminants**, such as salts and metals, which can be naturally occurring or may 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 and may also come from gas stations, urban stormwater runoff, and septic systems;

**Radioactive Contaminants**, which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

## Questions?

For more information about this report, or for any questions relating to your drinking water, please call Mark White, Water Department Superintendent, or Steve Hanes, Laboratory Technician, at (740) 532-3412.

## IDSE Sampling

Under the Stage 2 Disinfectants/Disinfection By-products Rule (D/DBPR), our public water system was required by the U.S. EPA to conduct an evaluation of our distribution system. This is known as an Initial Distribution System Evaluation (IDSE) and is intended to identify locations in our distribution system with elevated disinfection by-product concentrations. The locations selected for the IDSE may be used for compliance monitoring under Stage 2 DBPR, beginning in 2012. Disinfection by-products are the result of providing continuous disinfection of your drinking water and form when disinfectants combine with organic matter naturally occurring in the source water. Disinfection by-products are grouped into two categories: Total Trihalomethanes (TTHM) and Haloacetic Acids (HAA5). The U.S. EPA sets standards for controlling the levels of disinfectants and disinfectant by-products in drinking water, including both TTHMs and HAA5s.

## Water Treatment Process

The treatment process consists of a series of steps. First, raw water is drawn from our water source, the Ohio River, through a low lift pumping station where potassium permanganate is added for zebra mussel control. The water then flows into a pre-sedimentation basin, where mud settles out through 60-degree tub settlers. After a four-hour detention time, the water enters a second tank, where powdered activated carbon is added to remove organic compounds that primarily cause disagreeable taste and odors. The water then goes to a mixing tank where alum and a polymer are added to cause small particles to adhere to one another (called floc), making them heavy enough to settle into two solid contact basins, from which sediment is removed. At this point, the water is filtered through layers of anthracite and silicate sand. As smaller, suspended particles are removed, turbidity disappears and clear water emerges. Chlorine is added as a precaution against any bacteria that may be present. (We carefully monitor the amount of chlorine, adding the lowest quantity necessary to protect the safety of your water without compromising taste.) Finally, sodium hydroxide (used to adjust the pH) and fluoride (used to prevent tooth decay) are added before the water is pumped to sanitized underground reservoirs and into your home or business.

### Source Water Assessment

A Source Water Assessment Plan (SWAP) is now available at our office. This plan is an assessment of the delineated area around our listed sources through which contaminants, if present, could migrate and reach our source water. It also includes an inventory of potential sources of contamination within the delineated area and a determination of the water supply's susceptibility to contamination by the identified potential sources.

According to the Source Water Assessment Plan, our water system had a susceptibility rating of 'medium.' If you would like to review the Source Water Assessment Plan, please feel free to contact our office during regular office hours.



### Fixtures With Green Stains

A green or blue-green stain on kitchen or bathroom fixtures is caused by tiny amounts of copper that dissolve in your home's copper plumbing system when the water sits unused overnight. Copper staining may be the result of a leaky faucet or a faulty toilet flush valve, so be sure your plumbing is in good working order.

Copper stains may also be caused by overly hot tap water. Generally speaking, you should maintain your water temperature at a maximum of 120 degrees Fahrenheit. You should consult the owner's manual for your heater or check with your plumber to determine your current heat setting. Lowering your water temperature will reduce the staining problem and save you money on your energy bill.

Also keep in mind that a tap that is used often throughout the day usually will not produce copper stains, so if you flush the tap for a minute or so before using the water for cooking or drinking, copper levels will be reduced.



## Sampling Results

During the past year we have taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The table below shows only those contaminants that were detected in the water. The state requires us to monitor for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

| REGULATED SUBSTANCES  |              |            |              |                 |                |           |   |
|---|--------------|------------|--------------|-----------------|----------------|-----------|---|
| SUBSTANCE (UNIT OF MEASURE)                                 | YEAR SAMPLED | MCL [MRDL] | MCLG [MRDLG] | AMOUNT DETECTED | RANGE LOW-HIGH | VIOLATION | TYPICAL SOURCE  |
| Barium (ppb)  | 2008         | 2,000      | 2,000        | 31.3            | NA             | No        | Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits                                |
| Beta/Photon Emitters <sup>1</sup> (pCi/L)                   | 2003         | 50         | 0            | 4.65            | NA             | No        | Decay of natural and man-made deposits  |
| Chlorine (ppm)  | 2008         | [4]        | [4]          | 1.43            | 1.16–1.59      | No        | Water additive used to control microbes   |
| Fluoride (ppm)  | 2008         | 4          | 4            | 0.985           | 1.065–0.834    | No        | Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories |
| Haloacetic Acids [HAA] (ppb)                                | 2008         | 60         | NA           | 16.85           | 4.20–35.10     | No        | By-product of drinking water disinfection   |
| Nitrate (ppm)   | 2008         | 10         | 10           | 0.75            | 0.1–1.13       | No        | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits                               |
| TTHMs [Total Trihalomethanes] (ppb)                         | 2008         | 80         | NA           | 39.62           | 10.60–80.20    | No        | By-product of drinking water chlorination   |
| Total Organic Carbon [TOC] <sup>2</sup> (removal ratio)     | 2008         | TT         | NA           | 1.3             | 0.6–1.74       | No        | Naturally present in the environment  |
| Turbidity <sup>3</sup> (NTU)                                | 2008         | TT         | NA           | 0.15            | 0.03–0.15      | No        | Soil runoff   |
| Turbidity (Lowest monthly percent of samples meeting limit) | 2008         | TT         | NA           | 100             | NA             | No        | Soil runoff   |

Tap water samples were collected for lead and copper analyses from sample sites throughout the community

| SUBSTANCE (UNIT OF MEASURE) | YEAR SAMPLED | AL    | MCLG  | AMOUNT DETECTED (90TH% TILE) | SITES ABOVE AL/ TOTAL SITES | VIOLATION | TYPICAL SOURCE   |
|-----------------------------|--------------|-------|-------|------------------------------|-----------------------------|-----------|--|
| Copper (ppb)                | 2008         | 1,300 | 1,300 | 333                          | 0/30                        | No        | Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives |
| Lead (ppb)                  | 2008         | 15    | 0     | 6.1                          | 0/30                        | No        | Corrosion of household plumbing systems; Erosion of natural deposits                                   |

| IDSE SAMPLING RESULTS                              |              |                |   |
|--|--------------|----------------|---|
| SUBSTANCE (UNIT OF MEASURE)                        | YEAR SAMPLED | RANGE LOW-HIGH | TYPICAL SOURCE                            |
| Haloacetic Acids - IDSE Results (ppb)              | 2008         | 0–26.1         | By-product of drinking water disinfection |
| Total Trihalomethanes [TTHMs] - IDSE Results (ppb) | 2008         | 22.9–148.6     | By-product of drinking water disinfection |

<sup>1</sup>The MCL for beta particles is 4 mrem/year. The U.S. EPA considers 50 pCi/L to be the level of concern for beta particles.

<sup>2</sup>The value reported under Amount Detected for TOC is the lowest ratio between percentage of TOC actually removed to the percentage of TOC required to be removed. A value of greater than one indicates that the water system is in compliance with TOC removal requirements. A value of less than one indicates a violation of the TOC removal requirements.

<sup>3</sup>Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the filtration system.

## Definitions

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

**MCL (Maximum Contaminant Level):** The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

**MCLG (Maximum Contaminant Level Goal):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

**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.

**NA:** Not applicable.

**NTU (Nephelometric Turbidity Units):** Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the

average person.

**pCi/L (picocuries per liter):** A measure of radioactivity.

**ppb (parts per billion):** One part substance per billion parts water (or micrograms per liter).

**ppm (parts per million):** One part substance per million parts water (or milligrams per liter).

**removal ratio:** A ratio between the percentage of a substance actually removed to the percentage of the substance required to be removed.

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