

# 2008 DRINKING WATER QUALITY REPORT

JULY, 2008



## HENDERSON WATER UTILITY NORTH PLANT

Reporting data collected in 2007  
PWSID 0510188

*We at Henderson Water Utility works around the clock to provide top quality water to every tap.*

*We ask that all our customers help us protect our water sources, which are the heart of our community, our way of life, and our children's future.*

### A MESSAGE FROM THE HENDERSON WATER UTILITY STAFF

HWU employs a staff of operators and lab personnel who work hard every day to ensure that the water you drink is not only safe, but also tastes and looks good. We produce nearly 3.8 Billion gallons of water each year for our City and County customers. Every gallon of this water is monitored for your safety and health.

Advancements in technology during the last few years have allowed impurities in drinking water to be analyzed at much smaller limits than ever before. While the industry standards that we use to treat our community's drinking water is measured in parts per million (ppm), there are a few elite environmental laboratories that are now able to identify compounds in parts per billion, parts per trillion and even down to **parts per quadrillion!**

As technology has improved, speculation of new health threats have been highly publicized. Many of these concerns have focused on drugs and pharmaceuticals because it has been estimated that more than 50% of the medicine taken by many patients is expelled before it is utilized by the body. Although great strides are being made in the identification of these compounds, it has not been determined if the levels are high

enough to be considered a health risk. For example, one of the most commonly identified compounds with the highest level of concentration was Naproxen (the generic name for Aleve). Samples indicated that there were potential concentrations in the US drinking water supply of up to **8 parts per trillion**. Using that information as a basis, a person would have to drink more than 2400 - 12 ounce glasses of water a day (225 gallon) for 80 years to consume the equivalent of one 200 mg tablet of Naproxen.

Many professional organizations and agencies in the water treatment industry are currently doing extensive research into what effects these infinitesimal exposure levels may have on our health.

In the mean time, your water is tested every day for more than 100 different impurities and compounds that are **known to be harmful to our health**. In the course of a year, nearly one million checks and analyses (visual, analytical, and physical) are done by our treatment plant equipment, operators, and lab personnel to insure that your water is pure, healthy and free from known contaminants.

Please do not ever hesitate to call us with any questions or concerns. We are pleased to help in every way we can.

### TYPE AND LOCATION OF WATER SOURCE

The employees of Henderson Water Utility are very excited to provide you with this year's Annual Water Quality Report. We want to keep you informed about the quality of our water and services we deliver to you every day of the year. Our goal is and always will be to provide you a safe and dependable supply of drinking water. We want you to understand the efforts we make continually to improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water remains at the highest possible level.

Our source for surface water comes from the Ohio River at approximately river mile marker 803, or the corner of 5<sup>th</sup> and Water streets in Henderson. The sources of drinking water (both tap 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 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, and can also come from gas stations, urban stormwater runoff, and septic systems.

Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities. To ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

**The area around your water source is mostly residential but also contains some industrial activity. The final source water assessment for this system has been completed and is contained in the Henderson County Water Supply Plan. A copy of the plan is available for inspection at Henderson Water Utility or at the Green River Area Development District**

**office in Owensboro, KY. Following is a summary of the system's susceptibility to contamination, which is a part of the completed Source Water Plan (SWAP). An analysis of the susceptibility of Henderson's Ohio River and Green River water supplies to contamination indicates that this susceptibility is generally moderate. However, there are a few areas of high concern. Potential contaminant sources of concern include bridges, waste generators or transporters, landfills, a port, a railroad, row crop land coverage, urban and recreational grass coverage, and sewer lines. Each of these are rated as high in a susceptibility analysis because of the contaminant type, their proximity to the intakes, and the high chance of release.**

The data presented in this report are from the most recent testing done in accordance with administrative regulations in 401 KAR Chapter 8. As authorized and approved by EPA, the State has reduced monitoring requirements for certain contaminants to less often than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data in this table though representative, may be more than one year old.

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 Environmental Protection Agency Safe Drinking Water Hotline (800-426-4791).

## DEFINITIONS & ABBREVIATIONS

**Non-Detects (ND)** - laboratory analysis indicates that the contaminant is not present.

**Unregulated Contaminants (BDL)** - contaminants that require monitoring, but no MCL has been set at this time.

**Not Applicable (N/A)** - Does not apply.

**Below Detection Levels (BDL)** - laboratory analysis indicates that the constituent is not present.

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

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

**Nephelometric Turbidity Unit (NTU)** -

nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

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

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

**Maximum Contaminant Level (MCL)** - 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.

**Maximum Contaminant Level Goal (MCLG)** - 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.

**Maximum Residual Disinfectant Level (MRDL)** - 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.

**Maximum Residual Disinfectant Level Goal (MRDLG)** - 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.

**Picuries per liter (pCi/L)** - a measure of the radiation absorbed by the body.

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### 2008 HENDERSON WATER UTILITY NORTH CCR TABLE USING 2007 DATA

|  | Allowable Levels   | Highest Single Measurement | Lowest Monthly %                    | Violation                        | Likely Source  |           |   |
|--|--|----------------------------|-------------------------------------|----------------------------------|----------------|-----------|---|
| Turbidity (NTU) TT<br>* Representative samples of filtered water   | No more than 1 NTU*<br>Less than 0.3 NTU in 95% of monthly samples | 0.176                      | 100                                 | No                               | Soil runoff    |           |   |
| TURBIDITY IS A MEASUREMENT OF THE CLARITY OF THE WATER; IT CAN PROVIDE A MEDIUM FOR MICROBIAL GROWTH. TURBIDITY IS MONITORED BECAUSE IT IS A GOOD INDICATOR OF THE EFFECTIVENESS OF THE FILTRATION SYSTEM. |  |                            |                                     |                                  |                |           |   |
| <b>Regulated Contaminant Test Results</b>  |  |                            |                                     |                                  |                |           |   |
| Contaminant [code] (units)   | MCL  | MCLG                       | Report Level                        | Range of Detection               | Date of Sample | Violation | Likely Source of Contamination  |
| <b>Radioactive Contaminants</b>  |  |                            |                                     |                                  |                |           |   |
| Alpha emitters [4000] (pCi/L)  | 15   | 0                          | 0.15                                | 0 to 0.6                         | Nov-07         | No        | Erosion of natural deposits   |
| Combined radium (pCi/L)  | 5  | 0                          | 0.25                                | 0.1 to 0.7                       | Jun-07         | No        | Erosion of natural deposits   |
| Uranium (µg/L)   | 30   | 0                          | 0.15                                | 0 to 0.3                         | Nov-07         | No        | Erosion of natural deposits   |
| <b>Inorganic Contaminants</b>  |  |                            |                                     |                                  |                |           |   |
| Barium [1010] (ppm)  | 2  | 2                          | 0.037                               | 0.037 to 0.037                   | Feb-07         | No        | Drilling wastes; metal refineries; erosion of natural deposits                              |
| Copper [1022] (ppm) sites exceeding action level 0   | AL = 1.3   | 1.3                        | 0.119 (90 <sup>th</sup> percentile) | 0.009 to 0.387                   | Sep-06         | No        | Corrosion of household plumbing systems   |
| Fluoride [1025] (ppm)  | 4  | 4                          | 1.00                                | 0.091 to 1.25                    | Jul 2007       | No        | Water additive which promotes strong teeth  |
| Lead [1030] (ppb) sites exceeding action level 0   | AL = 15  | 0                          | 1 (90 <sup>th</sup> percentile)     | 1 to 2                           | Sep-06         | No        | Corrosion of household plumbing systems   |
| Nitrate [1040] (ppm)   | 10   | 10                         | 2.20                                | 1.59 to 2.74                     | Nov-07         | No        | Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits |
| Nitrite [1041] (ppm)   | 1  | 1                          | 0.02                                | 0.02 to 0.02                     | Feb-07         | No        | Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits |
| <b>Synthetic Organic Contaminants including Pesticides and Herbicides</b>  |  |                            |                                     |                                  |                |           |   |
| Atrazine [2050] (ppb)  | 3  | 3                          | 0.08                                | BDL to 0.3                       | Jul-07         | No        | Runoff from herbicide used on row crops   |
| <b>Disinfectants/Disinfection Byproducts and Precursors</b>  |  |                            |                                     |                                  |                |           |   |
| Total Organic Carbon (ppm) (measured as ppm, but reported as a ratio)  | TT*  | N/A                        | 1.01 (lowest average)               | 0.94 to 1.13 (monthly ratios)    | N/A            | No        | Naturally present in environment.   |
| *Monthly ratio is the % TOC removal achieved to the % TOC removal required. Annual average of the monthly ratios must be 1.00 or greater for compliance.   |  |                            |                                     |                                  |                |           |   |
| Chlorine (ppm)   | MRDL = 4   | MRDLG = 4                  | 1.57 (highest average)              | 0.21 to 2.8                      | N/A            | No        | Water additive used to control microbes.  |
| Chlorite (ppm)   | 1  | 0.8                        | 0.14 (average)                      | 0.01 to 0.137                    | Jun            | No        | Byproduct of drinking water disinfection.   |
| Chlorine dioxide (ppb)   | MRDL = 800   | MRDLG = 800                | 140                                 | 0 to 140                         | Dec            | No        | Water additive used to control microbes.  |
| HAA (ppb) (all sites) [Haloacetic acids]   | 60   | N/A                        | 43 (system average)                 | 20 to 66 (range of system sites) | N/A            | No        | Byproduct of drinking water disinfection  |
| TTHM (ppb) (all sites) [total trihalomethanes]   | 80   | N/A                        | 42 (system average)                 | 10 to 92 (range of system sites) | N/A            | No        | Byproduct of drinking water disinfection.   |

## VULNERABILITY

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/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 (800-426-4791).

## DETECTS

**Fluoride:** Fluoride has been added to the drinking water for dental health purposes. The water system monitors the fluoride levels on a daily basis and sends out samples twice a month to an independent state certified lab for analysis.

**Nitrates:** As a precaution we always notify physicians and health

care providers in this area if there is ever a higher than normal level of nitrates in the water supply.

**Lead:** Lead in drinking water is rarely the sole cause of lead poisoning, but it can add to a person's total lead exposure. All potential sources of lead in the household should be identified and removed, replaced or reduced.

**MCL's** are set at very stringent levels. To understand the possible health effects described for many regulated contaminants, a person would have to drink 2 liters of water at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

## VIOLATIONS

1. Mandatory Language was missing from 2006 CCR. This has been corrected, for the 2007 CCR.
2. TOC Violation: This Public Notice violation is results from an old TOC violation. Compliance Period 6-1-2005 -6-30-2005. For failure to submit TOC sampling results on time

## CUSTOMERS' RIGHT TO KNOW INFORMATION

If you have any questions about this report or concerning your water utility, please contact Lucy Fry, at (270) 826-2421. We want our valued customers to be informed about their water utility. If you want to learn more, please contact us, at

the telephone number listed, or at [www.hkywater.org](http://www.hkywater.org), or join us at any of our regularly scheduled council meetings. They are normally held on the Third Monday of each month at 4:30 p.m. at the Bob Gish Administration Building, 111 5<sup>th</sup>

Street, Henderson, Ky.

The current Water Board Commissioners are: Jeanne Marie Gadiant, Steve Austin, George Jones, Laffoon (Chip) Williams and Rodger Bird.

## INFORMATION 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. Your local public water system 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 or at <http://www.epa.gov/safewater/lead>.

## When It Rains It Drains

### What is Stormwater?

Stormwater runoff occurs when precipitation from rain or melting snow flows over the ground. Impervious surfaces like driveways, sidewalks, streets, and rooftops prevent stormwater from naturally soaking into the ground. To manage this, communities have storm sewers that help to carry stormwater away from homes and businesses.

### Did you Know?

When it rains, the stormwater runoff is carried away by pipes and ditches of our storm sewers. These pipes and ditches are different than our regular sewers because the water goes directly into our streams, rivers, and lakes. Unlike sewage, stormwater runoff does not drain to a treatment plant.

As it flows, stormwater picks up debris, chemicals, dirt, and other pollution and carries it into our waterways where it can harm fish, frogs, and other aquatic plants and animals. This is the same water that we use for swimming, fishing, and drinking.

### New Importance

Communities like Henderson are facing new federal regulations to reduce pollution. These regulations focus on improving the quality of our streams by reducing the amount of pollution carried by stormwater runoff into our waterways.

### 10 Simple Steps to Improve the Quality of Our Streams

1. Don't dump anything down storm drains.
2. Use pesticides and fertilizers sparingly.
3. Put litter in its place.
4. Pick up after your pet.
5. Sweep driveways (do not spray wash).
6. Collect yard waste & keep it out of storm drains.

7. Use a car wash (they recycle dirty water).
8. Recycle used motor oil.
9. Check your car for leaks (fix them!).
10. Have your septic tank inspected every 3-5 years.

### What's Happening?

Communities around the country are taking action to improve pollution controls. Some of the activities include:

- Increasing public awareness and involvement.
- Eliminating illegal connections and discharges to the storm sewer system.
- Increasing sediment controls at construction sites.
- Requiring controls in new development to remove pollutants from stormwater.
- Improving pollution prevention from community facilities such as maintenance garages, equipment areas, and work areas.

### Did you Know...

Polluted stormwater runoff is a leading cause of impairment to unhealthy US waterways – nearly 40%.

### At Home and at Work

There are many ways to reduce pollution at home and work, beginning with the 10 Simple Steps.

Businesses such as restaurants, automotive services, construction/development, landscaping and agriculture can also take steps to reduce runoff pollution, including:

- Promote recycling.
- Keep dumpster doors closed and covered to help keep them clean and avoid leaks.
- Use yard and deicing chemicals sparingly.
- Cover or seed exposed soil so it doesn't erode.

- Dispose of hazardous materials (paint, chemicals) at proper facilities (not the trash).
- Store and apply manure away from waterways.

### How Can You Help?

**Get Involved** – Show support and contact your local stormwater program for ways to volunteer.

**Stay Informed** – Take an active interest in our waterways, find out what's threatening them and being done to protect them.

**Do Your Part** – Do not pollute, and report pollution entering our stormwater.

Remember that YOU are the SOLUTION to POLLUTION.

### Understanding Stormwater

To find out more about stormwater, visit:  
Environmental Protection Agency:

[www.epa.gov/npdes/stormwater](http://www.epa.gov/npdes/stormwater)  
[www.epa.gov/owow/nps/](http://www.epa.gov/owow/nps/)

For Kids:  
[www.epa.gov/owow/nps/kids/](http://www.epa.gov/owow/nps/kids/)

Kentucky:  
[www.water.ky.gov](http://www.water.ky.gov)

Henderson:  
[www.hkywater.org](http://www.hkywater.org)  
E-mail: [stormwater@hkywater.org](mailto:stormwater@hkywater.org)  
Phone: (270) 826-2824

## SEWER BACKUPS IN HOMES OR BUSINESSES

A sewer backup in your home or business caused by a blockage in the Henderson system can be an unfortunate and frustrating situation. The Henderson Water Utility staff takes every precaution possible to prevent such events from occurring, but occasionally a line blockage or other circumstance can cause a backup to occur in a home or business.

### 1. How do I determine if my home or business is at risk from a sewer backup?

Your home or business is at risk if the elevation of your lowest floor, containing plumbing fixtures or floor drains, is lower than the top of a manhole near your property. The Henderson Water Utility staff will be happy to assist you in determining if your home or business is at risk.

### 2. How do I prevent a backup?

If your home or business is at risk of a backup, to prevent a backup from happening and possibly causing damage to your home or business, HWU strongly suggests you install either a sump pump or a backwater valve. A backwater valve may be required under city ordinance Section 23-18.

A sump pump is the most reliable alternative; but it is also the most expensive. Included is specific information about a backwater valve including installation and maintenance information and other details on the installation of a backflow valve or sump pump.

### 3. What do I do if I have a backup?

If you suspect the backup is in your line between the home or business and the main line in the street, call your plumber. If you believe the backup is in HWU's line call us at 826-2824. This number is answered 24 hours a day, seven days a week. If you have a backup and need to contact a company to clean up the area in your home where the backup occurred, HWU can provide you with a list of companies that we know to do this type of clean up.

### 4. Will my homeowner's insurance cover a sewer backup?

Every homeowner's insurance policy is different check with your insurance company to see if you're covered.

## Gravity Backwater Valve Specifications, Installation, And Inspection/Maintenance

### Specification

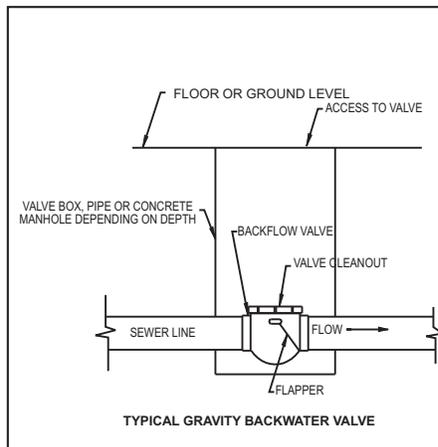
The gravity backwater valve should be a PVC Company part number 375 P for 3", 475 P for 4", and a 675 P for 6", or an approved equal.

### Installation

The backwater valve should be installed in the sewer line either outside the house or in the floor of the basement. The backwater valve should be accessible for maintenance. If it is installed at a depth of 30" or less below the ground or floor, a meter box or 16" pipe is adequate for the access. If the below ground or below floor elevation is greater than 30", a concrete, pvc or polyethylene pipe manhole of 30" diameter or larger should be installed around the valve to allow access for maintenance.

### Inspection and Maintenance

After significant rainfall events or at least once every 6 months the backwater valve should be inspected. The cleanout top should be opened and the flapper in the valve removed and inspected. Before replacing the flapper the inside of the backwater valve should be inspected and the area cleaned as necessary. After replacing the flapper, the cleanout top should be replaced.

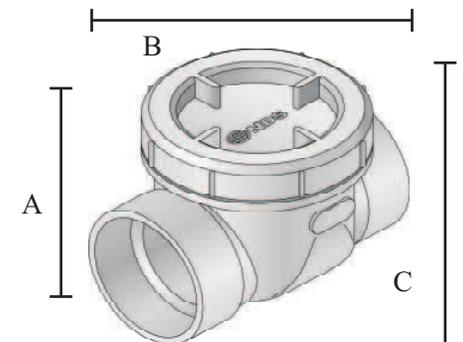


### Gravity Backwater Valve

| Description | Part No. | A     | B     | C    |
|-------------|----------|-------|-------|------|
| 3"          | 375P     | 1.5"  | 7.5"  | 5.5" |
| 4"          | 475P     | 2.0"  | 10.5" | 7.0" |
| 6"          | 675 P    | 2.25" | 15.5" | 8.7" |

### How to Specify

NDS #375P, #475P, or #675P PVC Backwater Valve, threaded access cap, elastomeric flapper gasket, neoprene access cap gasket, and removable uni-directional flow flapper.



NDS#675P Al.eps