A Message from the Treatment Manager

There is nothing more important to HWU than having a community that is confident in the quality of its drinking water. Water is an integral part of life and there should be no compromise in us providing you with safe, healthy, and aesthetically pleasing water. As such, your water is under tremendous scrutiny. There are more than 2,000 checks and analyses performed every day to ensure that your water is healthy, clear, and available on demand. In the course of a year, nearly one million tests (visual, analytical, and physical) have been conducted to ensure the quality of your water. This report is a summation of those tests. It is telling you that you can not only get a drink of water from your kitchen sink but you can also watch your children play in the fountain downtown or swim at the pool without worry of a waterborne illness.

Our goal is to continuously improve in quality and efficiency. As our society becomes more technologically advanced, and scientists are able to detect smaller and smaller constituents in the water, regulations become more stringent and difficult to meet without our treatment processes also advancing. This past year, we have done extensive work to our 6 filters. This work is saving you money by helping to decrease our operating costs, but more importantly, it's providing you with even better water than before.

Looking to the future, we are facing a lot of difficult challenges together. Aging infrastructure, increased regulatory and security demands, disastrous weather, rising petroleum costs, and the desire to attract more industry makes replacement and expansion not only a necessity, but an unavoidable progression. This is happening in every growing community and will continue to happen – the City of Henderson is not alone in this costly dilemma. We tend to look at a community water system in terms of a living body, with the water treatment plant(s) being the heart. Water is the lifeblood of the community and the distribution system is its arteries and veins. Any doctor will tell you that the worst condition your veins, arteries, and/or heart is in, the worse condition your whole body is in – it's the same for a community. It takes commitment, trust, and sometimes a total transplant, to get back into a healthy state where life is prolonged.

HWU is working hard to provide exceptional service for today as well as the future for the residents of Henderson. High quality water is our number one goal, whether we’re supplying you with something to drink or discharging what we’ve used back into the river for the next community to treat. Your good health is our highest priority – your confidence is our reward. We encourage you to report every instance where you feel quality is deficient. We want our system to be perfect but are not blind to our limitations – we want to correct any and every quality deficiency as quickly and effectively as we can. We need your help to do this and thank you for it in advance. It is a privilege to serve the residents of Henderson.

Kevin M. Roberts

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 5th and Water streets in Henderson. Surface water is classified as rivers, lakes, streams, ponds, and reservoirs. As water travels over the surface of the land it dissolves naturally occurring minerals. In some cases, radioactive material can be picked up from the presence of animal or human activity.

Contaminants that may be present in source water include: microbial, inorganic, pesticides and herbicides, organic, and radioactive materials. In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of contaminants in water provided by public water systems.

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 Water 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, 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 may 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** - 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 in ten million or a single part in 10,000 parts per billion.
- **Parts per billion (ppb)** - one part per billion corresponds to one in 1,000,000,000 parts per billion.
- **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 which 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.
- **Pluviometer per liter (pCi/L)** - a measure of the radiation absorbed by the body.

#### Allowable Levels

<table>
<thead>
<tr>
<th>Contaminant (code) units</th>
<th>MCL</th>
<th>MCLG</th>
<th>Report Level</th>
<th>Range of Detection</th>
<th>Date of Sample</th>
<th>Violation</th>
<th>Likely Source of Contamination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpha Emitters [4000] (pCi/L)</td>
<td>15</td>
<td>0</td>
<td>0.4</td>
<td>0 to 0.4</td>
<td>Oct-02</td>
<td>N</td>
<td>Erosion of natural deposits</td>
</tr>
<tr>
<td>Combined radium (pCi/L)</td>
<td>5</td>
<td>0</td>
<td>1.2</td>
<td>0 to 1.2</td>
<td>Oct-02</td>
<td>N</td>
<td>Erosion of natural deposits</td>
</tr>
<tr>
<td>Barium [1010] (ppm)</td>
<td>2</td>
<td>2</td>
<td>0.054</td>
<td>0.054 to 0.054</td>
<td>Jul-05</td>
<td>N</td>
<td>Drilling wastes; metal refineries; erosion of natural deposits</td>
</tr>
<tr>
<td>Copper [1022] (ppm) sites exceeding action level 0</td>
<td>AL = 1.3</td>
<td>1.3</td>
<td>0 (90th percentile)</td>
<td>0 to 0.218</td>
<td>Aug-03</td>
<td>N</td>
<td>Corrosion of household plumbing systems</td>
</tr>
<tr>
<td>Fluoride [1025] (ppm)</td>
<td>4</td>
<td>4</td>
<td>1.33</td>
<td>0.82 to 1.33</td>
<td>Nov</td>
<td>N</td>
<td>Water additive which promotes strong teeth</td>
</tr>
<tr>
<td>Nitrate [1024] (ppm)</td>
<td>10</td>
<td>10</td>
<td>2.27</td>
<td>0.898 to 2.27</td>
<td>May-05</td>
<td>N</td>
<td>Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits</td>
</tr>
<tr>
<td>Atrazine [2050] (ppb)</td>
<td>3</td>
<td>3</td>
<td>0.3</td>
<td>BDL to 0.3</td>
<td>Jul-05</td>
<td>N</td>
<td>Runoff from herbicide used on row crops</td>
</tr>
<tr>
<td>Di(2-ethylhexyl)phthalate [2339] (ppb)</td>
<td>6</td>
<td>0</td>
<td>3.8</td>
<td>0.8 to 3.8</td>
<td>Jan-05</td>
<td>N</td>
<td>Discharge from rubber and chemical factories</td>
</tr>
</tbody>
</table>

#### Regulated Contaminant Test Results

| Total Organic Carbon (ppm) (measured as ppm, but reported as a ratio) | TT* | N/A | 1.19 (lowest average) | 0.99 to 1.6 (monthly ratios) | N/A | N | 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 | 1.50 (highest average) | 0.05 to 2.20 | N/A | N | Water additive used to control microbes |
| Chlorite (ppm) | 0.8 | 0.310 (average) | 0.04 to 0.31 | Oct | N | Byproduct of drinking water disinfection |
| Chlorine dioxide (ppb) | MRDL = 800 | MRDLG = 800 | 440 | 0 to 440 | Aug | N | Water additive used to control microbes |
| HAA (ppb) [Halobacetic acids] | 60 | N/A | 53 (highest average) | 26 to 70 | N/A | N | Byproduct of drinking water disinfection |
| TTHM (ppb) [total trihalomethanes] | 80 | N/A | 54 (highest average) | 23 to 123 | N/A | N | Byproduct of drinking water disinfection |

#### Unregulated Contaminants Results

<table>
<thead>
<tr>
<th>Contaminant [Code]</th>
<th>Unit</th>
<th>Average</th>
<th>Range</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bromodichloromethane [2943]</td>
<td>ppb</td>
<td>7.9</td>
<td>3.8 to 13</td>
<td>Jul-05</td>
</tr>
<tr>
<td>Bromofom [2942]</td>
<td>ppb</td>
<td>0.25</td>
<td>0 to 1</td>
<td>Jul-05</td>
</tr>
<tr>
<td>Chloriform [2941]</td>
<td>ppb</td>
<td>19.25</td>
<td>14 to 24</td>
<td>Apr-05</td>
</tr>
<tr>
<td>Dibromochloromethane [2944]</td>
<td>ppb</td>
<td>3.45</td>
<td>0.7 to 8</td>
<td>Jul-05</td>
</tr>
</tbody>
</table>

Turbidity is a measurement of the clarity of the water; it can provide a medium for microbial growth. Turbidity is monitored because it's a good indicator of the effectiveness of the filtration system.
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. 
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

HENDERSON WATER UTILITY NORTH WATER TREATMENT PLANT RECEIVED A REPORTING VIOLATION. THE CONSUMER CONFIDENCE REPORT (CCR) FOR 2004-2005. THE CCR HAD CONTENT PROBLEMS IN LANGUAGE, TABLE DETECT CONTENT, AND REPORTING ON DISTRIBUTION IN THE CERTIFICATION FORM. THIS IS ONLY A REPORTING VIOLATION AND DOES NOT REPRESENT AN EXCEEDENCE OF CONTAMINATES AND IN NO WAY ADVERSLEY AFFECTED THE QUALITY OF YOUR WATER.

CUSTOMERS’ RIGHT TO KNOW INFORMATION

If you have any questions about this report or your water utility, please contact Lucy Fry, at (270) 825-2421. 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 above, or at www.hhywater.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, 115th Street, Henderson, Ky.

The current Water Board Commissioners are:
Jeanne Marie Gadient, Leo Pechenpugh, George Jones, Lafoon (Chip) Williams and Rodger Bird.

Stormwater Runoff, Why is it a problem in Henderson?

Stormwater can pick up debris, chemicals, dirt, and other pollutants and flow into a storm sewer system or directly to a lake, stream, wetland, or the Ohio River. Anything that enters a storm sewer system is discharged untreated into the water bodies we use for swimming, fishing, and providing drinking water.

The effects of pollution

- Polluted stormwater runoff can have many adverse effects on plants, fish, animals, and people.
- Sediment can cloud the water and make it difficult or impossible for aquatic plants to grow. Sediment also can destroy aquatic habitats.
- Excess nutrients can cause algae blooms. When algae die, they sink to the bottom and decompose in a process that removes oxygen from the water. Fish and other aquatic organisms can't exist in water with low dissolved oxygen levels.
- Bacteria and other pollutants can wash into swimming areas and create health hazards, often making beach closures necessary. The lake at Audubon State Park has been closed to swimming for many years because of this.
- Debris, plastic bags, six-pack rings, bottles, and cigarette butts washed into water bodies can choke, suffocate, or disable aquatic life like ducks, fish, turtles, and birds.
- Household hazardous wastes like insecticides, pesticides, paint, solvents, used motor oil, and other auto fluids can poison aquatic life. Land animals and people can become sick or die from eating diseased fish and shellfish or ingesting polluted water.
- Polluted stormwater often affects drinking water sources. This, in turn, can affect human health and increase drinking water treatment costs.

We all live downstream from someone, and upstream from someone else. We inherit the pollution that comes from upstream. We greatly impact the quality of water for those who live downstream from us.

What can residential homeowners do to help the problem?

Lawn care

Excess fertilizers and pesticides applied to lawns and gardens wash off and pollute streams. In addition, yard clippings and leaves can wash into storm drains and contribute nutrients and organic matter to streams.

- Don't over water your lawn. Consider using a spicket hose instead of a sprinkler.
- Use pesticides and fertilizers sparingly. When use is necessary, use these chemicals in the recommended amounts. Use organic mulch or safer pest control methods whenever possible.
- Compost or mulch yard waste. Don't leave it in the street or sweep it into storm drains or streets.
- Cover piles of dirt or mulch being used in landscaping projects.

Auto care

Washing your car and degreasing auto parts at home can send detergents and other contaminants through the storm sewer system. Dumping automotive fluids into storm drains has the same result as dumping the materials directly into a water body.

- Use a commercial car wash that treats or recycles its wastewater, or wash your car on your yard so the water infiltrates into the ground.
- Repair leaks and dispose of used auto fluids and batteries at designated drop-off or recycling locations.

Septic systems

Leaking and poorly maintained septic systems release nutrients and pathogens (bacteria and viruses) that can be picked up by stormwater and discharged into nearby water bodies. Pathogens can cause public health problems and environmental concerns.

- Inspect your system every 3 years and pump your tank as necessary (every 3 to 5 years).
- Don't dispose of household hazardous waste in sinks or toilets.

Pet waste

Pet waste can be a major source of bacteria and excess nutrients in local waters.

- When walking your pet, remember to pick up the waste and dispose of it properly.
- Flush pet waste is the best disposal method. Leaking pet waste on the ground increases public health risks by allowing harmful bacteria and nutrients to wash into the storm drain and eventually into local water bodies.

Other choices we make can make a difference.

Permeable Pavement – Traditional concrete and asphalt don’t allow water to soak into the ground. Instead these surfaces rely on storm drains to divert unwanted water. Permeable pavement systems allow rain and snowmelt to soak through, decreasing stormwater runoff.

Rain Barrels – You can collect rainwater from rooftops in mosquito-proof containers. The water can be used later on lawn or garden areas.

Rain Gardens and Grassy Swales – Specially designed areas planted with native plants can provide natural places for rainwater to collect and soak into the ground. Rain from rooftop areas or paved areas can be diverted into these areas rather than into storm drains.

Vegetated Filter Strips – Filter strips are areas of native grass or plants created along roadways or streets. They trap the pollutants stormwater picks up as it flows across driveways and streets.

Spanish (Español) Este informe contiene información muy importante sobre la calidad de su agua beber.
Tradúzcalo o hable con alguien que lo entienda bien.
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 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, it’s best 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. On the back of this brochure 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. Is the Henderson Water Utility or the City responsible for damage from sewer backups?
Unfortunately, because these blockages in the system are random and unpredictable, under Section 23-18 of the City Code, HWU cannot be responsible for any damage to your property from a blockage. However, our staff is available to provide you with any technical assistance necessary as you try to prevent a backup from occurring again. You may call our System Operations Center at 826-2824 and ask for assistance or visit the Center at 230 North Alvasia Street.

5. Will my homeowner’s insurance cover a sewer backup?
Many homeowner’s policies cover damage from sewer backups. Check with your insurance company to see if you’re covered.

SEWER BACKUPS IN HOMES OR BUSINESSES
Gravity Backwater Valve Specifications, Installation, and Inspection/Maintenance

**Specification**
The gravity backwater valve should be a PVC Company part number 375P for 3", 475P for 4", and a 675P 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 height above 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**

<table>
<thead>
<tr>
<th>Description</th>
<th>Part No.</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>3”</td>
<td>375P</td>
<td>1.5&quot;</td>
<td>7.5&quot;</td>
<td>5.5&quot;</td>
</tr>
<tr>
<td>4”</td>
<td>475P</td>
<td>2.0&quot;</td>
<td>10.5&quot;</td>
<td>7.0&quot;</td>
</tr>
<tr>
<td>6”</td>
<td>675P</td>
<td>2.25&quot;</td>
<td>15.5&quot;</td>
<td>8.7&quot;</td>
</tr>
</tbody>
</table>

**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.