Water System #4610002

# ROCK HILL
SOUTH CAROLINA

## 2007 Consumer Confidence Report

# Rock Hill Drinking Water Exceeds Regulatory Standards

Through the Safe Drinking Water Act (SDWA), the Environmental Protection Agency (EPA) requires public water systems meet national drinking water standards to ensure that the health of water consumers is carefully protected. The SDWA requires all public water systems to publish an annual Consumer Confidence Report that explains how these drinking water standards are achieved. The City of Rock Hill's 2007 Consumer Confidence Report provides important information about how your water is treated, tested and distributed, and explains that the water provided to our customers meets and exceeds all federal and state water quality requirements. Please take the time to carefully review this report to learn about the nature of your drinking water, health concerns for specific customers and ways to conserve this valuable natural resource.

**The City is finalizing a major expansion at its Water Treatment Plan, including the addition of a state-of-the-art chemical building (shown on right), generators to provide emergency power, a modern electrical building, and a new lime silo (pictured in rear).**

**The Water Treatment Plant and Utilities staff were honored with several state and regional awards, including the SC Area-Wide Optimization Performance and South Carolina Dental Association awards. Awards were presented to (left to right), Susan Featherstone, Plant Superintendent; David Garris, Maintenance Technician; Diane Espey, Lab Analyst; Wayne Sloan, Waste Treatment Operator and Brian Allen, Pretreatment Technician (not pictured).**

# Customer Response to Drought Restrictions

Due to below average rainfall and crucially low lake levels, on October 25, 2007, the City of Rock Hill and its wholesale water customers declared a Stage 3 drought requiring the implementation of more stringent mandatory water restrictions. During these severe drought conditions, Rock Hill and its wholesale customers urge consumers of public water to help maintain the health, sanitation and safety of our communities by adhering to the mandatory water restrictions. Residents of the York County area have been very cooperative and mindful of the worsening drought conditions. Conservation goals are being met successfully, however, regardless of our efforts; the lack of rain has drastically affected the water supply. As regional drought conditions worsen and water conservation is increasingly critical to maintain an adequate water supply, we ask that our customers and water users stay up to date on enacted water restrictions, as they could change from week to week.

To learn more, please visit the City of Rock Hill website at www.cityofrockhill.com or call the city's water hotline at 803/326-2450 for current drought status.

# Why Water Is Important To You

To ensure that tap water is safe to drink, the EPA prescribes stringent maximum contaminant levels (MCLs) for certain contaminants in water supplied by public water systems.

All sources of drinking water are subject to potential contamination by substances that are naturally occurring contaminants or man made. All drinking water, including *bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants in drinking water does not necessarily indicate the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at **1-800-426-4791**. You can also visit the EPA's web site at **www.epa.gov/safewater**

The sources of both drinking water and tap water include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over land surfaces and underground, it dissolves naturally occurring minerals, radioactive materials and can pick up substances resulting from the presence of animals and human activity.

**Contaminants that might be present in source water include:**

- Microbial contaminants, such as viruses and bacteria, which may come from 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, farming, mining, industrial or domestic wastewater discharges or oil and gas production.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, storm water runoff or residential uses.
- Organic chemicals, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff and septic systems.
- Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water results primarily from materials and components associated with service lines and home plumbing.

The City of Rock Hill Utilities 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, one way to minimize the potential for lead exposure is 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 drinking water, consider having your water tested for lead levels. The Safe Drinking Water Hotline offers information on lead in drinking water, testing methods, and steps you can take to minimize exposure. Or go online to: http://www.epa.gov/safewater/lead.

Removing all contaminants from drinking water would be extremely costly, and, in nearly all cases, this would not provide any greater protection of health. In fact, a few naturally occurring substances may actually improve the taste of drinking water and may have low-level nutritional values.

For most customers, water that meets all federal, state and local regulations is considered safe to drink. Some customers may be more vulnerable to contaminants in drinking water than the general population. People with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS and other immune system disorders, and some elderly people and infants can be at particular risk from infection. People with these health concerns should seek advice about drinking water from their health care provider. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbial contaminants are available by calling the EPA SAFE DRINKING WATER HOTLINE at **1-800-426-4791.**

To understand the possible health effects described for many regulated contaminants, a person would have to drink two liters of water every day at the MCL for a lifetime to have a one-in-a-million chance of having the described health effect.

As required by law, Rock Hill monitors around the clock for contaminants in the drinking water that we treat and supply to our customers. In 2007, Rock Hill performed more than 3,000 system tests at 146 local sites. These tests measure for bacteria, chlorine residual, pH and temperature. Sites include schools, residences, commercial businesses and industries in the Rock Hill water service territory. Once a year, we perform special monitoring for phosphate levels at 10 sites across the city. Every three years, we monitor for lead and copper levels at 30 sites. Test results are provided in the table.

The City of Rock Hill, along with four other S.C. cities, was the first in the country to participant in a joint EPA/SCDHEC performance based training in the area of disinfection byproduct control strategies. This elite training took 18 months to complete and was handled by three EPA specialists trained in optimizing water treatment. The training was intended to educate water operators on how we can meet the needs of disinfecting the water while controlling the formation of byproducts resulting from the disinfection process. City staff successfully completed the training and accepted certificates from both the USEPA and the State.

Every regulated contaminant detected in the water, even in the most minute traces, is listed in the table, which contains the name of each substance; the highest level allowed by regulation; the ideal goals for public health; the amount detected and the likely sources of contamination. In 2007, there were more than 100 contaminants that were tested for and not detected. (For a list of non-detects, call 803/329-5502.)

* FDA regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

# Water Quality Data for 2007: Table of Test Results

## Regulated Contaminants Detected

### Microbiological Contaminants

| Contaminant | Violation | Unit of Measure | MCLG | MAX ALLOW | MCL | Highest Single Measurement | Lowest Monthly Percentile | Date of Highest Measurement | Likely Source |
|---|---|---|---|---|---|---|---|---|---|
| Turbidity | No | Ntu | 0 | 1.0 | TT=0.3 | 0.12 | 100% | 7/01/07 | Soil runoff |

| Contaminant | Violation | Unit of Measure | MCLG | MCL | Range of Dectection | Removal Ratio Running Average | Likely Source |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | No | ppm | TT | TT | 1.03 - 2.03 | 1.14 | Naturally present in the environment |

### Inorganic Contaminants

| Contaminant | Violation | Unit of Measure | MCLG | MCL | Level Detected | Range of Detection | Likely Source |
|---|---|---|---|---|---|---|---|
| Nitrate | No | ppm | 10 | 10 | 0.28 | | Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits |
| Fluoride | No | ppm | 4 | 4 | 0.89 | 0.87-0.89 | Water additive that promotes strong teeth |
| Chromium | No | ppb | 100 | 100 | 16 | ND-16 | Discharge from Steel and Pulp; Mills; Erosion of natural deposits |

| Contaminant | Violation | Action Level | 90th Percentile | Num. of Sites over Action Level | Range of Detection | Year | Likely Source |
|---|---|---|---|---|---|---|---|
| Lead | No | 15 ppb | 8.1 | 0 | ND-12.4 | 2005 | Corrosion of household plumbing systems |
| Copper | No | 1.3 ppm | 0.084 | 0 | ND-0.1 | 2005 | Corrosion of household plumbing systems |

### Disinfection Byproducts (DBP)

| Contaminant | Violation | Unit of Measure | MRDL | MRDLG | Level Detected | Running Annual Average | Likely Source |
|---|---|---|---|---|---|---|---|
| Chlorine | No | ppm | 4 | 4 | 1.1 - 1.5 | 1.30 | Water additive used to control microbes |
| Chlorite | No | ppm | 0.80 | 0.80 | Nondetect – 0.57 | N/A | Byproduct of chlorinated drinking water |
| Chlorine Dioxide | No | ppm | 0.80 | 0.80 | Nondetect – 0.47 | N/A | Byproduct of chlorinated drinking water |

### Radionuclide Contaminants

| Contaminant | Violation | Unit of Measure | MCLG | MCL | Level Detected | Year | Likely Source |
|---|---|---|---|---|---|---|---|
| Combined Radium | No | pCi/L | 0 | 5 pCi/L | 1.5 | 2007 | Erosion of natural deposits |

### Volatile Organic Contaminants

| Contaminant | Violation | Unit of Measure | MCLG | MCL | Highest Quarterly Avg. | Range of Detection | Likely Source |
|---|---|---|---|---|---|---|---|
| Total Trihalomethanes | No | ppb | 0 | 80 | 80 | 15 - 95 | Byproduct of chlorinated drinking water |
| Haloacetic Acids | No | ppb | 0 | 60 | 50 | 26 - 80 | Byproduct of chlorinated drinking water |

### Unregulated Contaminant

| Contaminant | Violation | Unit of Measure | MCLG | MCL | Level Detected | Likely Source |
|---|---|---|---|---|---|---|
| Sodium | No | ppm | Not regulated | Not regulated | 10 | Sodium not regulated parameter in drinking water. Large amounts of sodium may be harmful to persons suffering from cardiac, renal and circulatory diseases. |

### Woodforest Subdivision Water System

| Contaminant | Violation | Action Level | 90th Percentile | Number of Sites Over Action Level | Likely Source |
|---|---|---|---|---|---|
| Lead | No | 15 ppb | 0.5 | 0 | Corrosion of household plumbing systems |
| Copper | No | 1.3 ppm | 0.13 | 0 | Corrosion of household plumbing systems |

# Glossary of Terms*

• **Action Level (AL)** — The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
• **Detect(ed)** — Laboratory analysis indicates that a contaminant is present.
• **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 treatment technology.
• **Maximum Contaminant Level Goal (MCLG)** — The level of 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 disinfectant allowed in finished drinking water.
• **Maximum Residual Disinfectant Level Goal (MRDLG)** — The level of disinfectant below which there is no known or expected risk to health. MRDLGs allow for a margin of safety.
• **Nephelometric turbidity units (Ntu)** — The unit of measure for measuring turbidity.
• **Parts per billion (ppb) or micro-grams per liter** — One part per billion corresponds to a single penny in $10 million.
• **Parts per million (ppm) or milli-grams per liter (mg/l)** — One part per million corresponds to a single penny in $10,000.
• **Picocuries per Liter (pCi/L)** — A measure of the radioactivity in water.
• **Treatment Technique (TT)** — A required process intended to reduce the level of a contaminant in drinking water.
• **Turbidity** — The degree of cloudiness due to particles suspended in water.

**Referenced in Table of Test Results*

# Other Testing Results

| Parameter | Explanation | City of Rock Hill Tap |
|---|---|---|
| Hardness (CaCo3 mg/l) | Hardness in drinking water is caused by two minerals: calcium and magnesium. The amount of these minerals in potable water determines if it is hard or soft. If water is said to be "hard," making lather or suds for washing is difficult. | The City of Rock Hill's tap water is "soft," with an average annual hardness of 30 mg/l. |
| Fluoride (mg/l) | When added or naturally present in the correct amounts, fluoride in drinking water has greatly improved the dental health of American consumers. | The City of Rock Hill's tap water has an average of 0.90 mg/l of fluoride. |

# Water Treatment and Distribution Systems

## 2007 Statistics

| | |
|---|---|
| Current Service Area (approximate sq. miles) | 40 |
| Miles of Water Main Lines | 505 |
| Number of Fire Hydrants Maintained | 2,728 |
| Number of Elevated Water Tanks | 5 |
| Number of Water Meters | 32,492 |
| Daily Avg. Consumption (in mill. gal.) | 14.3 |
| Annual Water Consumption (in mill. gal.) | 5,604.2 |
| Maximum Plant Capacity (in mill. gallons/day) | 30 |

# Information about Rock Hill's Drinking Water Source

The City Of Rock Hill water system is located in York County, South Carolina in the Catawba-Santee Basin(s) and serves a primary population of more than 55,000. Rock Hill treats and distributes water to retail customers in the Rock Hill area and provides water to wholesale customers such as the Town of Fort Mill, the River Hills community, portions of York County, the Catawba Indian Nation and a small number of private water suppliers in the area.

The drinking water sources for the system are surface water intakes at the Catawba River/Lake Wylie in the northeast portion of the county. Water is then pumped to the Cherry Road treatment plant. There, conventional chemical disinfection and treatment processes produce the water you consume. Access to our raw water intake and treatment plant is highly restricted and closely monitored around the clock.

The South Carolina Department of Health and Environmental Control (SCDHEC) serves as coordinating agency for the State's Source Water Assessment and Protection Program (SWAP), a program required by EPA's 1996 amendments to the Safe Drinking Water Act. SWAP provides added protection of our water by conducting assessments for all drinking water sources across South Carolina and implementing safeguard measures.

In 2003, SCDHEC completed the City of Rock Hill's Source Water Assessment. The assessment provides an inventory of potential contaminant sources (PCSs), identifies potential contaminants of interest and ranks the potential susceptibility of these PCSs with respect to the water source. SCDHEC has identified Rock Hill's source water to be susceptible to contaminants such as volatile organic contaminants, petroleum products, metals, nitrates, pesticides and herbicides. The City of Rock Hill continually monitors for the presence of these contaminants, and through state-of-the art disinfection techniques, delivers safe drinking water to its customers.

For a complete copy of this assessment report, contact Susan Featherstone at 803/329-5502 or visit SCDHEC online: http://www.scdhec.net/environment/water/srcewtrreports.htm

# How is My Water Treated?

## Step 1

**The Source:** Lake Wylie is our raw water source. Chlorine is added to the water to start the disinfection process.

## Step 2

**Transmission:** Raw water travels four miles through a 54-inch transmission line to the treatment plant.

## Step 3

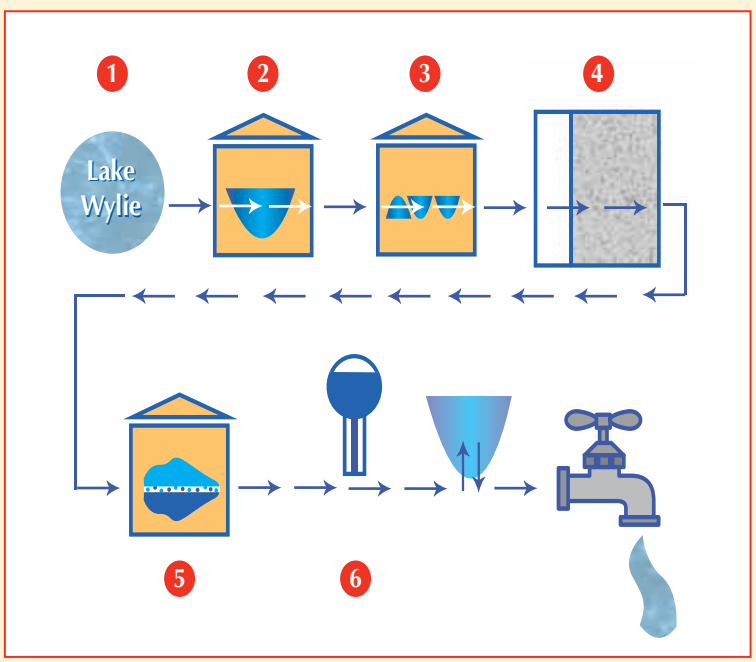
**Pre-treatment Chemical Addition/Coagulation:** Once the water enters the plant, pre-treatment chemicals are added, such as chlorine for disinfection and Delpac to aid in the coagulation or removal of particles.

## Step 4

**Flocculation/Sedimentation:** Once under the influence of the pre-treatment chemicals, the water goes through a two-stage mixing chamber where flocculation, the combination of solids and chemicals, occurs. This "floc," or heavier solids, travels through large sedimentation basins, where the heavy particles settle out of the water.

## Step 5

**Filtration:** The water flows from the sedimentation basin to a filter area. The filter area, which contains a carbon-like substance and sand, traps any remaining suspended particles in the water.




## Step 6

**Post-treatment Chemical Addition:** Once through the filters, post-treatment chemicals, such as chlorine for continued disinfection and fluoride for cavity prevention, are added to the water before it leaves the plant to the tap.

# Water Conservation: Every Drop Counts

Water is a precious resource in our environment. Growing populations and ongoing droughts are squeezing our water resources dry, causing natural habitat degradation and impacting our everyday use of water.

We have no choice but to pay more attention to how we are using water, and how we may be wasting it. We must bridge the gap between our understanding of how important water is to our survival and taking action to ensure that we have an adequate supply for years to come.

Below is a list of the many simple ways you can take action and conserve water, both inside and outside our homes:

| ASK YOURSELF: | HOW DOES THIS ADD UP? | WATER CONSERVATION TIP |
|---|---|---|
| How many showers are taken each day by members of your household? How many minutes on average does each of these showers last? Take these numbers and multiply them by 4 gallons per minute to calculate how much water your household uses for showers each day. | 4 showers/day x 6 minutes/shower x 4 gallons/minute = 96 gallons/day or approximately 2,880 gallons/month. Reduce shower times by 1 minute and save nearly 1,000 gallons/month! | Reduce shower times by 1 minute and save nearly **1,000 gallons/month!** |
| How many loads of laundry are washed each week? Each load of laundry uses approximately 55 gallons of water. Take the number of loads washed per week and multiply this by 55. | 6 loads of laundry each week x 55 gallons/load = 330 gallons/ week or approximately 1,320 gallons/month | Always wash full loads of laundry, which may help reduce the number of loads washed each week. Reduce laundry by one load/week and save **220 gallons/month!** |
| Did you know that each time you flush a toilet an average of 3.5 gallons of water is used? On average, each person flushes a toilet about 5 times per day. | 4 people in household x 5 flushes/person x 3.5 gallons/flush = 70 gallons of water/day or 2,100 gallons/month | Install high efficiency toilets that use on average only 1.5 gallons/flush and save 40 gallons of water/day, or approximately **1,200 gallons of water/month!** Even better, consider installing new and innovative "dual flush" toilets that utilize half-flush and full-flush modes. |
| How often and when do you water your lawn and garden during the growing season? Do you water by hand (using hoses or sprinklers) or do you have an automatic irrigation system? Do you have drought-tolerant plants? | The size and composition of each household's lawn and garden varies. However, statistics show that automatic irrigation systems use more than twice the amount of water than hand watering with a hose or sprinkler. Planting native and drought tolerant plants also helps to reduce water consumption. | Consumers with automatic irrigation systems can help save water if they regularly adjust irrigation heads and valves to prevent runoff, check for leaks, control irrigation timing and install rain shut-off devices.<br><br>Low-water use lawns and gardens, with proper soil composition and regular maintenance, establish deeper roots and are more disease and insect resistant.<br><br>Watering at night helps to reduce evaporation. |

For more information on water conservation, visit the Utilities Department pages of the City website at www.cityofrockhill.com and go to H2Ouse icon. Go on a "water saver" home tour, learn more conservation tips and find valuable information about water efficient products that can help you save on your water usage. For more information on water quality, visit the following web sites: www.epa.gov/safewater www.scdhec.net/water

## Directory

The City's water system is governed by Rock Hill City Council and operated by the Utilities Department under the supervision of City Management.

**Doug Echols, Mayor**
**Susie B. Hinton, Councilmember Ward 1**
**Kathy Pender, Councilmember Ward 2**
**Kevin Sutton, Councilmember Ward 3/Mayor Pro Tem**
**John Gettys Jr., Councilmember Ward 4**
**Osbey Roddey, Councilmember Ward 5**
**Jim Reno, Councilmember Ward 6**

**Carey F. Smith, City Manager**
**Gerald E. Schapiro, Assistant City Manager**
**Nick Stegall, Public Services Administrator**
**James G. Bagley, Jr., Utilities Director**
**Susan Featherstone, Water Treatment Plant Superintendent**

Rock Hill City Council meets on the second and fourth Monday of each month at 6:00 p.m. Council meetings are broadcast live and re-aired on Rock Hill's government access channel, RHTV 19.

**Website: www.cityofrockhill.com**
**Customer Service, Utility Bill Questions: 803/325-2500**
**24-Hour Automated Service: 803/329-5500**
**Rock Hill Water Treatment Plant: 803/329-5502**
**Utilities Department: 803/329-5500**
**City Council/Meeting Information: 803/329-7012**
**TDD for Hearing Impaired: 803/329-8787**
**EPA Safe Drinking Water Hotline: 1-800-426-4791**
**Palmetto Utility Protection Service (PUPS) - "Call Before You Dig": Dial "811" or call toll free 1-888-721-7877**

811 Know what's below. Call before you dig.

**Spanish Line: 803/325-2537**

**EN ESPAÑOL: Este informe contiene información importante acerca de su agua potable. Por favor, haga que alguien lo traduzca para usted, o hable con alguien lo entienda. Gracias.*