

2010 Water Quality Report

SOUTH CENTRAL CONNECTICUT
REGIONAL WATER AUTHORITY

2010 Water Quality Report

June 2011

Essential to a healthy, thriving and economically vibrant community is an abundant, reliable supply of water. The South Central Connecticut Regional Water Authority (Authority) plays an important role in meeting the public water supply needs of the region. We provide high-quality drinking water to over 400,000 consumers. This water quality report, required by federal and state regulations, provides you with a summary of the region's public drinking water quality.

The Authority employs the multi-barrier approach to ensuring water quality. This approach focuses on watershed and aquifer management to protect the quality of our drinking water sources, treatment of the water prior to consumption, maintaining the distribution system that delivers the water to the tap, and monitoring the quality to ensure compliance. Our water testing is stringent. Last year we performed more than 110,000 tests on over 10,000 water samples. We are pleased to again report that these tests show the Authority's water quality meets or, in most cases, is better than, the state and federal standards with one exception, sodium, which is discussed in this report. We report all of this information on a regular basis to the Connecticut Department of Public Health.

Our pride is built on a heritage of providing service and water quality excellence to the communities we serve. Should you have questions concerning the information in this report, please call Customer Service at 203-562-4020. Thank you for allowing us to serve you.



Anthony DiSalvo
Chairperson
Regional Water Authority



Larry L. Bingaman
President & Chief
Executive Officer

David J. Borowy
Chairperson
Representative Policy Board

How Safe is My Water?

To ensure that your tap water is high quality, the U.S. Environmental Protection Agency (EPA) and the Connecticut Department of Public Health (DPH) set standards for the presence of certain contaminants in water provided by public water systems. A review of 2010 water quality data shows that your drinking water is within these standards with one exception, sodium, where we exceeded a notification level set by the DPH. This is explained later in this report.

In 2010, we tested your water for over 70 regulated contaminants. As listed in this report, 17 were detected. Those detected were present in amounts that are allowed by state and federal regulations established under the Federal Safe Drinking Water Act.

Testing for some regulated contaminants is not required every year. This is because the previous monitoring results demonstrated a lack of need according to both state and federal officials. For example, in 2008 we tested for lead and copper, which were not detected. This older data is still representative.

We are also required to analyze for some non-regulated contaminants to determine whether they are present. During the past year we tested for 44 non-regulated contaminants; 11 were detected. We also performed tests in 2010 for the Unregulated Contaminant Monitoring Rule 2 as required by the EPA. Data from these tests are available upon request from the Water Quality Manager at 203-562-4020.

Do I Need to Take Special Precautions?

All drinking water, including bottled water, can reasonably be expected to contain small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk.

Persons with HIV/AIDS, chemotherapy patients, those who have undergone organ transplants or anyone else with immune system problems may be more vulnerable to contaminants in drinking water. The EPA and Center for Disease Control guidelines on ways to lessen the risk from contaminants are available from the Safe Drinking Water Hotline at **800-426-4791**.

Lead and Copper

Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink water containing lead in excess of the action level over many years could develop kidney problems or high blood pressure.

Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The South Central Connecticut Regional Water Authority 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 15 to 30 seconds or until it becomes cold or reaches a steady temperature 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>.

The major source of copper in drinking water comes from the corrosion of household plumbing systems and the erosion of natural deposits. Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor. To minimize exposure to copper, please follow the flushing instructions for lead, outlined above.

Sodium

Sodium is an essential nutrient in your diet. It helps maintain the right balance of fluids in your body and transmit nerve impulses to your muscles. One sample of water in 2010 temporarily exceeded Connecticut's sodium notification level of 28 mg/L. Sodium in drinking water normally presents no health risks, as about 99 percent of your daily salt intake is from food and only about one percent from water. However, elevated sodium in water may be considered a health concern for those on a salt-restricted diet. If you have been placed on a sodium-restricted diet, please inform your physician that our water can contain as much as 29 mg/L of sodium.

Source Water Assessment Information

The source water assessment of the South Central Connecticut Regional Water Authority was completed by the Department of Public Health, Drinking Water Division. The updated assessment report can be found on the Department of Public Health's website: <http://www.ct.gov/dph>.

Meeting Federal and State Standards

Before water ever reaches your tap, it goes through a multi-step process:

Source Water Protection: We protect over 27,000 acres of land in the region and manage it carefully. We monitor the quality of the water in our reservoirs and aquifers and the activity on the surrounding land, watching for potential contamination of the sources of your tap water.

Treatment: Aquifer water is naturally filtered underground. Lake water is treated at our filtration plants. Both are disinfected with chlorine to kill microbes that can cause illness. We add fluoride to prevent dental cavities and phosphate to minimize corrosion of pipes.

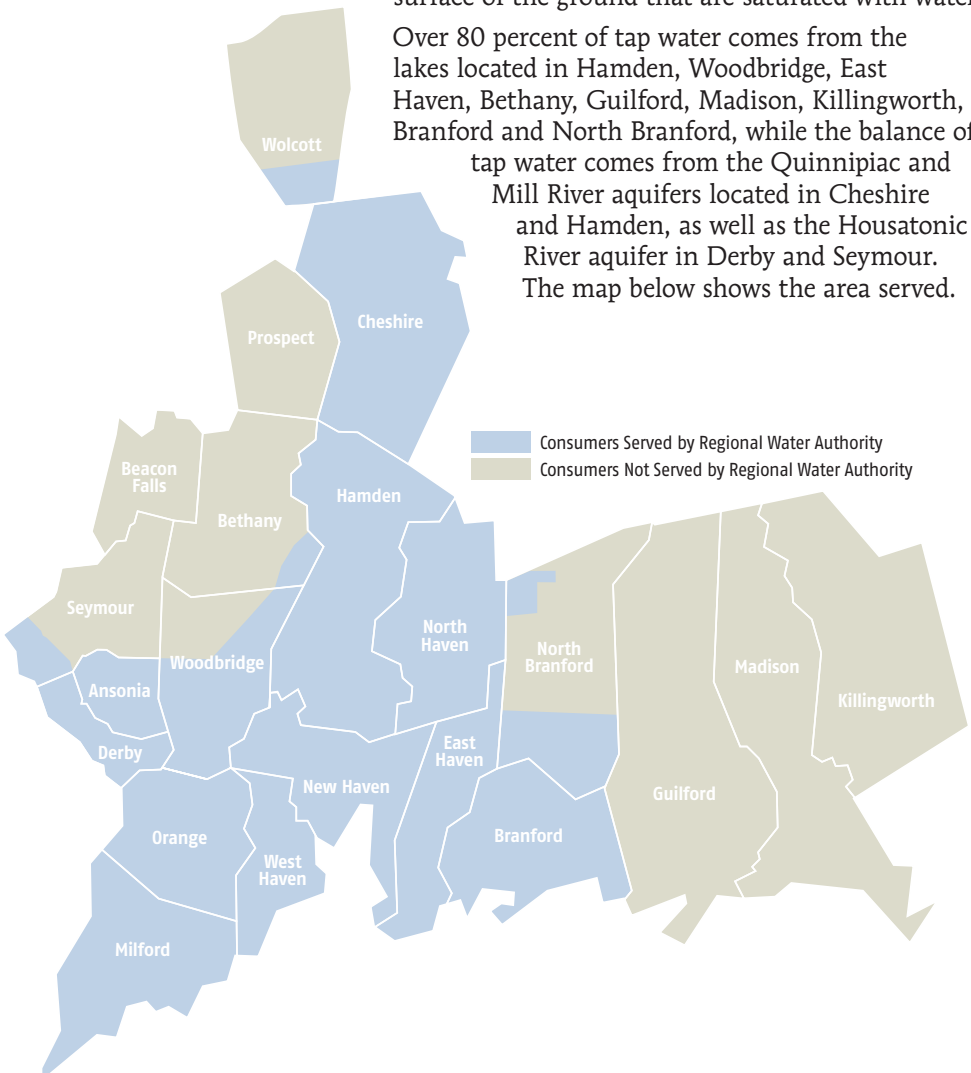
Distribution: Treated water is delivered through a network of over 1,700 miles of pipes, pumping stations and storage tanks. We carefully maintain our extensive distribution system to ensure that high-quality water is available when you turn on your tap.

Monitoring: We conduct thousands of water quality tests each month in our state-certified laboratory. Samples are collected from throughout the water distribution system, within our water filtration plants and from the lakes and aquifers where the water is stored prior to treatment.

Where Does My Water Come From?

There are 10 lakes and three aquifers that provide your water. The lakes are filled by rivers. Aquifers are natural sand, gravel and bedrock areas below the surface of the ground that are saturated with water.

Over 80 percent of tap water comes from the lakes located in Hamden, Woodbridge, East Haven, Bethany, Guilford, Madison, Killingworth, Branford and North Branford, while the balance of tap water comes from the Quinnipiac and Mill River aquifers located in Cheshire and Hamden, as well as the Housatonic River aquifer in Derby and Seymour. The map below shows the area served.



Our distribution system is interconnected. Water from two or more sources may be delivered to some neighborhoods. The blending of water permits us to not only meet your water demands, especially during a heat wave, but readily ensures that water is available to fight a fire or other emergency.

The charts on pages 6 and 7 show the water quality test results for the treated water that originates from the lakes and from the aquifers. Please note that the water coming from your tap could be from lakes, aquifers or a combination of both during various times of the year.

How Can Contaminants Get into My Drinking Water?

As water travels over the surface of land or through the ground, it can pick up substances such as naturally occurring minerals and other materials that may come from animal and human activity. Both untreated and treated water may include the following kinds of contamination:

Inorganic compounds, such as salt and metals, 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 may come from a variety of sources such as agriculture, urban stormwater runoff and residential uses.

Organic chemical compounds, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, can come from gas stations, urban stormwater runoff or septic systems. Some of these compounds, such as trihalomethanes and haloacetic acids, are disinfection byproducts that result from the use of chlorine as a disinfectant in water treatment, which reacts with naturally occurring materials in water.

Radioactive contaminants can be naturally occurring or may be the result of oil and gas production.

Radon is a radioactive gas that you cannot see, taste or smell. It is found throughout the United States. Radon can move up through the ground and into a home through cracks and holes in the foundation. It can build up to high levels in all types of homes. Radon can also get into indoor air when released from tap water during showers, washing dishes and other household activities. In most cases, however, radon entering the home through tap water is a small source of all the radon in indoor air. Radon is a carcinogen. Breathing air containing radon can lead to lung cancer. Drinking water containing radon may also cause increased risk of stomach cancer. If you are concerned about radon in your home, test the air. Testing is inexpensive and easy. If the level of radon in your air is four picoCuries per liter of air (pCi/L) or higher, you need to take steps to reduce it. For additional information, call your state radon program or call EPA's Radon Hotline (800-SOS-RADON).

Microbial contaminants, such as bacteria, viruses and cryptosporidium, may come from sewage treatment plants, septic systems, agricultural livestock operations, wildlife or natural sources.

Water Conservation

Water is a precious resource. It is important to use it wisely. While the normal amount of rainfall we receive is sufficient to meet our needs, we encourage consumers to use water wisely. Here's how:

- ▶ Fix dripping faucets and leaky toilets.
- ▶ Run the dishwasher and washing machine only when full.
- ▶ Turn the water off when you brush your teeth or shave.
- ▶ Install water-efficient appliances. Look for the WaterSense label.
- ▶ To avoid evaporation, water your lawn in the morning or at night.
- ▶ If you have a swimming pool, cover it and cut water loss through evaporation by 90 percent.
- ▶ Clean your sidewalk or driveway with a broom instead of a hose and save up to 80 gallons of water.
- ▶ Apply mulch around flowers, shrubs, vegetables and trees to reduce evaporation, promote plant growth and control weeds.

For more tips, go to www.rwater.com or visit www.epa.gov/WaterSense.



About the Authority

The Regional Water Authority, a five-person board, functions as a board of directors. It oversees the adoption of annual operating and capital budgets and provides strategic direction. The duties of the 21-member Representative Policy Board are to appoint the five members to serve on the Authority and to approve land sales, rate increases, bond sales and any capital project with a cost in excess of \$2 million.

The Authority normally meets on the third Wednesday of each month at 8 a.m., and the Representative Policy Board normally meets on the third Thursday at 6:30 p.m. at our headquarters at 90 Sargent Drive.

Please call to confirm meeting time.

South Central Connecticut Regional Water Authority
90 Sargent Drive, New Haven CT 06511-5966
Customer Service: 203.562.4020
Fax: 203.624.6129 / TDD: 203.562.5055
On the Internet: www.rwater.com
General E-mail: ask.info@rwater.com

The pages of this report contain a map (page 3) and important terms, definitions and abbreviations (page 8) referred to in this report.

Please refer to them as you review the information and charts (pages 6-7) in this water quality report.

Este informe contiene información muy importante sobre su agua beber. Tradúzcalo ó hable con alguien que lo entienda bien.

This report contains important information about your drinking water. Translate it, or speak with someone who understands it.

2010 Water Quality Report: Test Results

Regulated Contaminants Found in Lakes and Aquifers

Substance	MCL	MCLG	Highest Level Detected	Met Regulatory Standards
<i>Total Coliform Bacteria</i>	Presence of coliform bacteria not to exceed 5.00% of monthly samples	0%	0.40% (June 2010) Range 0.0% – 0.40%	YES
<i>Turbidity (lakes)</i>	TT = 95% of samples \leq 0.3 NTU ^(e)	NA	0.22 NTU	YES
Substance	MRDL	MRDLG	Average Level and Range Detected	Met Regulatory Standards
<i>Chlorine</i>	4 ppm	4 ppm	1.6 ppm Range 0.6 – 2.2	YES
Substance	MCL	MCLG	Average Level and Range Detected	Met Regulatory Standards
<i>Barium</i>	2 ppm	2 ppm	0.075 ppm Range 0.007 – 0.219	YES
<i>Chloride</i>	250 ppm	NA	24 ppm Range 8 – 42	YES
<i>Combined Radium</i>	5 pCi/L	0	BDL pCi/L Range ND – 2 <i>Analyzed 2006 & 2010^(h)</i>	YES
<i>Fluoride</i>	4 ppm	4 ppm	0.96 ppm Range 0.04 – 1.44	YES
<i>Gross Alpha Emitters</i>	15 pCi/L	0	6.76 pCi/L	YES
<i>Nitrate (as nitrogen)</i>	10 ppm	10 ppm	1.199 ppm Range 0.004 – 4.568	YES
<i>Strontium 90</i>	NA	NA	BDL pCi/L Range ND – 3.0 <i>Analyzed 2006 & 2010^(h)</i>	YES
<i>Total Haloacetic Acids (THAA)</i>	60 ppb Average	NA	19 ppb Range ND – 55 ^(a)	YES
<i>Total Organic Carbon (TOC)</i>	TT = Removal Ratio \geq 1 ^(f)	NA	1.8 Range 1.0 – 3.1	YES
<i>Total Trihalomethanes (TTHM)</i>	80 ppb Average	NA	28 ppb Range ND – 88 ^(a)	YES
<i>Turbidity (aquifers)</i>	TT = 5 NTU	NA	BDL NTU Range ND – 0.99 ^(a)	YES
<i>Uranium</i>	30 ug/L	0 ug/L	BDL ug/L Range ND – 3.54 <i>Analyzed 2006 & 2010^(h)</i>	YES
Substance	MCL	MCLG	90th Percentile ^(b)	Met Regulatory Standards
<i>Lead</i>	AL = 15 ppb ^(c)	0	2 ppb <i>Analyzed 2008^(d)</i>	YES
<i>Copper</i>	AL = 1.3 ppm ^(c)	1.3	0.34 ppm <i>Analyzed 2008^(d)</i>	YES

2010 Water Quality Report: Test Results

Unregulated Contaminants Found in Lakes and Aquifers

Substance	MCL	Average Level and Range Detected During 2010	Met Regulatory Standards
<i>Bromodichloromethane</i>	NA	6 ppb Range ND – 17	NA
<i>Bromoform</i>	NA	BDL ppb Range ND – 1	NA
<i>Chloroform</i>	NA	21 ppb Range ND – 76	NA
<i>Dibromochloromethane</i>	NA	1 ppb Range ND – 4	NA
<i>Dibromoacetic Acid</i>	NA	BDL ppb Range ND – 2	NA
<i>Dichloroacetic Acid</i>	NA	7 ppb Range ND – 21	NA
<i>Monochloroacetic Acid</i>	NA	1 ppb Range ND – 4	NA
<i>Radon</i>	NA	367 pCi/L Range ND – 1744	NA
<i>Sulfate</i>	NA	13 ppm Range 8–30	NA
<i>Trichloroacetic Acid</i>	NA	11 ppb Range ND – 31	NA

Substance	Notification Level	Average Level and Range Detected	Met Regulatory Standards
<i>Sodium</i>	28 ppm	16 ppm Range 7 – 29 ^(g)	NO

Notes

- (a) Individual sample and individual location
- (b) Calculated value derived from the analysis performed on high priority customers selected in accordance with the Lead and Copper Rule
- (c) Action level is based on the calculated 90th percentile
- (d) Test frequency as determined by state and federal regulatory agencies
- (e) 95% of samples within a given month
- (f) Ratio is a value derived from monthly TOC percent removal calculation
- (g) See sodium notice on page 2.
- (h) Test frequency and location are determined by state and federal regulatory agencies.

Technology, Definitions, and Water Quality Measurement Units Listed in This Report

AL <i>Action Level</i>	The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements that a water system must follow.	ug/L <i>Micrograms per Liter</i>	A unit of concentration for dissolved substances based on their weights.
BDL <i>Below Detection Level</i>	Calculated value resulting in below detection level.	NA <i>Not Applicable</i>	Not applicable or required.
MCL <i>Maximum Contaminant Level</i>	The highest level of a contaminant allowed in drinking water. Maximum Contaminant Levels are set as close to the Maximum Contaminant Level Goal as feasible, using the best available treatment technology.	ND <i>Not Detected</i>	Below detection level.
MCLG <i>Maximum Contaminant Level Goal</i>	The level of a contaminant in drinking water below which there is not known or expected risk to health. Maximum Contaminant Level Goals allow for a margin of safety.	NTU <i>Nephelometric Turbidity Units</i>	A measure of clarity of water. Turbidity more than five NTU is just noticeable to the average person.
MRDL <i>Maximum Residual Disinfectant Level</i>	The level of disinfectant added for water treatment that may not be exceeded at consumer's tap without adverse health effects.	ppb <i>Parts per Billion</i>	A measure of the concentration of a substance roughly equivalent to one inch in 15,750 miles or one minute in 2,000 years.
MRDLG <i>Maximum Residual Disinfectant Level Goal</i>	A non-enforceable health goal. It does not reflect the benefits of adding the chemical for the control of waterborne microbial contaminants.	ppm <i>Parts per Million</i>	A measure of the concentration of a substance roughly equivalent to half of a dissolved tablet of aspirin in a full 50-gallon bathtub of water.
MRR <i>Maximum Removal Ratio</i>	The calculated value derived for total organic carbon percent removal.	pCi/L <i>PicoCuries per Liter</i>	A measure of radioactivity in water.
		TT <i>Treatment Technique</i>	A required process intended to reduce the level of a contaminant in drinking water.

Potential Sources of Regulated Contaminants Listed in This Report

Substance	Potential Sources	Substance	Potential Sources
<i>Barium</i>	Discharge of drilling waste; discharge from metal refineries; erosion of natural deposits	<i>Nitrate (as Nitrogen)</i>	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits
<i>Chloride</i>	Naturally present in the environment	<i>Strontium 90</i>	Erosion of natural deposits
<i>Chlorine</i>	Water additive used to control microbes	<i>Total Coliform Bacteria</i>	Naturally present in the environment
<i>Combined Radium</i>	Erosion of natural deposits	<i>Total Organic Carbon (TOC)</i>	Naturally present in the environment
<i>Copper</i>	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives	<i>Total Haloacetic Acids (THAA)</i>	By-product of drinking water chlorination
<i>Fluoride</i>	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories	<i>Total Trihalomethanes (TTHM)</i>	By-product of drinking water chlorination
<i>Gross Alpha Emitters</i>	Erosion of natural deposits	<i>Turbidity</i>	Soil runoff
<i>Lead</i>	Corrosion of household plumbing systems; erosion of natural deposits	<i>Uranium</i>	Erosion of natural deposits

Potential Sources of Unregulated Contaminants Listed in This Report

Substance	Potential Sources	Substance	Potential Sources
<i>Bromodichloromethane</i>	Byproduct of drinking water chlorination	<i>Radon</i>	Naturally present in the environment
<i>Bromoform</i>	Byproduct of drinking water chlorination	<i>Sodium</i>	Naturally present in the environment; sources such as road salt storage and application, industrial wastes, sewage and fertilizers are usually the cause of elevated levels in drinking water supplies
<i>Chloroform</i>	Byproduct of drinking water chlorination	<i>Sulfate</i>	Naturally present in the environment or part of the water treatment process
<i>Dibromoacetic Acid</i>	Byproduct of drinking water chlorination	<i>Tichloroacetic Acid</i>	Byproduct of drinking water chlorination
<i>Dibromochloromethane</i>	Byproduct of drinking water chlorination		
<i>Dichloroacetic Acid</i>	Byproduct of drinking water chlorination		
<i>Monochloroacetic Acid</i>	Byproduct of drinking water chlorination		