

## Drinking Water Definitions

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

**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 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 Residual Disinfectant Level (MRDL)** — The highest level of a disinfectant allowed in drinking water. There is no convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

**Maximum Residual Disinfection 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.

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



## Water Capital Efficiency Plan

Part of ensuring a safe, reliable water supply includes caring for the infrastructure that brings fresh, quality water to your property. Water mains, pumping stations, storage tanks, valves and fire hydrants must all be maintained to work flawlessly. Of course, with 157 miles of infrastructure — some of which dates back to the late 1800's — this can pose a challenge. Infrastructure maintenance is expensive, but unplanned repairs are even more so! (And quite inconvenient to all involved!)

To care for Norwich's water system in the most cost effective manner, Norwich Public Utilities has developed a Water Capital Efficiency Plan. The Capital Efficiency Plan is a strategic infrastructure program that prioritizes the upgrades and repairs to the

community's entire water system. Prioritization decisions are based on a number of important factors including infrastructure age, quality control, state and federal environmental mandates as well as fire protection and community development needs.

In 2008, for example, important repairs were completed at the water storage tank located in Norwich's Business Park. Well-maintained water storage tanks ensure high quality water for firefighting, business and residents — whenever that valve or faucet is turned.

While the Capital Efficiency Plan won't prevent every unplanned water main break, it is expected to go a long way in minimizing customer costs and inconvenience!

## The Benefits of Drinking Tap Water

As little as 20 years ago, people relied solely on tap water as their main source of drinking water. But, in the past two decades, we've seen a change to bottled water, which promised a purer, healthier water source. But, is bottled water really a better alternative?

### Review the facts:

- Municipal tap water from surface water must be filtered and disinfected, but there are no federal filtration or disinfection requirements for bottled water
- By law, municipal tap water can have no confirmed E.coli or fecal coliform bacteria; the FDA has no such rules for bottled water
- Municipal tap water must meet standards for certain toxic or cancer-causing chemicals, such as phthalate (a chemical that can leach from plastic, including plastic bottles)
- Tap water contains chlorination which kills bacteria; bottled water does not
- Drinking tap water is not only good for mental and physical health, but it also greatly reduces the number of plastic bottles that end up in landfills
- Municipal water systems must issue annual "right to know" reports — like this one — telling consumers what is in their water; However, there are no "right to know" requirements for bottled water
- For more facts, go to [www.epa.gov](http://www.epa.gov)

Now you know — drinking tap water is the healthier and more environmentally friendly choice. So, turn on the tap and drink up!

Source: [www.tappening.com](http://www.tappening.com) and [www.allaboutwater.org](http://www.allaboutwater.org)

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# 2008 WATER QUALITY REPORT

## For more information

There are many resources for more information about your drinking water:

- NPU  
860-887-2555; fax 860-823-4172, or visit [www.norwichpublicutilities.com](http://www.norwichpublicutilities.com)
- Uncas Health District  
860-823-1189
- Connecticut Department of Public Health Water Supplies Section  
860-509-7333
- U.S. Environmental Protection Agency Drinking Water Hotline  
1-800-426-4791



Norwich Public Utilities is proud to present our Water Quality Report for 2008.

This report summarizes results from tests of the drinking water we supply to our 36,067 customers in the towns of Norwich, Lisbon, Preston, Montville, Lebanon, Bozrah, and Franklin, Connecticut.

This past year, the water we supply once again met all Environmental Protection Agency (EPA) and state drinking water health standards. Our strict monitoring of your water supply continues to pay off with water quality that is superior to all government standards.

*Este informe contiene informacion muy importante sobre la calidad de su agua beber. Traduscalo o hable con alguien que lo entienda bien.*

*Enfamasyon ki enpòtan. Tanpri souple, fè yo tradwi!*

重要信息 (请翻译)

## Questions & Answers About Your Water

### Where does your water come from?

The water supply for Norwich Public Utilities comes from the surface water of two reservoirs: the Deep River Reservoir in Colchester and the Stony Brook Reservoir in Montville.

We also have two more developable water supplies with the Fairview and Bog Meadow Reservoirs, both located in Norwich. Finally, a well located in Yantic serves as a back up supply in the event of unexpected events such as water main breaks.

### How is this source water protected?

Making sure source water does not become contaminated makes good public health sense, good economic sense, and good environmental sense. We vigilantly monitor the reservoirs and all activity on the land that surrounds them, watching for potential contamination of our supplies. Testing is handled by the following certified laboratories:

- NPU Stony Brook Laboratory (#PH-0196)
- NPU Deep River Laboratory (#PH-0449)

- NPU Falls Avenue Laboratory (#PH-0453)

- Complete Environmental Testing (#PH-0116)

- State of Connecticut Laboratory

Source water assessments, conducted by the State of Connecticut Department of Public Health, in cooperation with the Department of Environmental Protection, on our two reservoirs have demonstrated a low susceptibility to contamination. These reports can be found online at: [www.dph.state.ct.us/BRS/Water/Source\\_Protection/Assessments/Assessments.htm](http://www.dph.state.ct.us/BRS/Water/Source_Protection/Assessments/Assessments.htm).

### How can you help?

Here's how you can help protect drinking water and keep it safe:

- Dispose of household chemicals properly.
- Help clean up the watershed that supplies your water.
- Attend public meetings about land use to make sure safe drinking water is considered.



For more information go to: [www.epa.gov/safewater/protect.html](http://www.epa.gov/safewater/protect.html).

The Norwich Public Utilities Board of Commissioners generally meets the fourth Tuesday of every month at 6 PM. These meetings are open to the public and unless otherwise noted, take place at 16 South Golden Street in Norwich.

If you have any questions about this report, contact us at 860-887-2555.

### How is the water distributed?

In order to serve our 36,067 customers, approximately 1.8 billion gallons of water are treated each year — that averages out to about 4.9 million gallons a day. Our storage tanks hold 9.3 million gallons of treated water which is delivered to your home through a 157-mile network of water main. We carefully maintain this system, using chlorine for disinfection, to ensure the water that comes out of your faucet is the same high quality water that leaves the treatment plant. As part of this maintenance, we routinely flush the system twice a year to remove sediment and keep the water clear. However, in the event of a drought, we may postpone a flush. Our distribution system is continuously tested all year; the results for 2008 appear inside.

## Required Consumer Confidence Report (CCR) Statement Addressing Lead in Drinking Water

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

### Special Notes About Your Water

**Lead:** Lead can enter drinking water as the result of corrosion of household plumbing systems or the erosion of natural deposits. 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 this water over many years could develop kidney problems or high blood pressure.

**Lead is not detected in NPU's source water supplies.**

**Copper:** Copper can enter drinking water as the result of corrosion of household plumbing systems, the erosion of natural deposits or leaching from wood preservatives. 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 doctor.

**Copper is not detected in NPU's source water supplies.**

**Arsenic:** EPA's arsenic standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

**Arsenic is not detected in NPU's source water supplies.**

**Cryptosporidium and giardia:** Cryptosporidium and giardia are protozoan parasites which may cause nausea, vomiting, gastroenteritis, diarrhea and associated abdominal cramping, bloating, fatigue, anorexia, and weight loss. Cryptosporidium contamination of a water supply is a significantly more serious problem among persons with HIV/AIDS or other immunosuppressive conditions, who may suffer chronic and debilitating diseases. These parasites can get into reservoir water through sewage and animal waste. NPU uses all necessary means to protect its watershed from runoff from farming activity, waste discharge and recreational use.

**The are no reported cases of water-borne disease due to cryptosporidium or giardia in NPU's supplies.**

**Nitrate:** Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and if untreated, die. Symptoms include shortness of breath and blue baby syndrome.

**Nitrate detected in NPU's source water supplies is well below the maximum contaminate level allowed by EPA.**

### What About People With Severely Compromised Immune Systems?

Some people may be more vulnerable to contaminants in drinking water than the general population. People with severely compromised immune systems, such as people with cancer undergoing chemotherapy, people 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/Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline at 1-800-426-4791.

### A Word About Contaminants in Drinking Water

Drinking water — including bottled water — may contain at least small amounts of contaminants. However, the presence of contaminants does not necessarily indicate that the water poses a health risk. EPA sets standards for approximately 90 contaminants in drinking water. EPA's standards, along with each contaminant's likely source and health effects, are available at [www.epa.gov/safewater/mcl.html](http://www.epa.gov/safewater/mcl.html).

### Contaminants and Their Possible Sources

**Microbial contaminants**  
Viruses or bacteria from agricultural runoff, septic, sewage, or wildlife.

**Pesticides and herbicides**  
Runoff resulting from residential, commercial and agricultural use.

**Radioactive contaminants**  
Oil and gas production, mining, and natural occurrences.

**Inorganic compounds**  
Salt and metals that occur naturally or come from stormwater runoff, wastewater discharge, oil and gas production, mining and farming.

**Organic chemical compounds**  
Including synthetic and volatile organic chemicals from industrial byproducts, petroleum production, gas stations and pharmaceuticals.

**Pharmaceuticals and personal care products (PPCPs)**  
Pharmaceuticals can enter the environment after use by individuals or domestic animals.

### Water Quality Testing for PPCPs in Public Water Supplies

Presently, the U.S. EPA and the State of Connecticut water quality testing requirements for public water systems do not include testing for pharmaceutical compounds. Also, the EPA does not regulate or have standards for pharmaceutical compounds in drinking water supplies. Because the low levels of pharmaceuticals in drinking water do not appear to be associated with any known human health effects at this time, the Department of Public Health will look to the EPA for guidance and carefully examine the research before requiring any pharmaceutical testing in Connecticut's public drinking water supplies.

Yet customers of Connecticut's water companies can have confidence that their water supplies are among the cleanest in the nation. Connecticut is unique from most states because treated sewage is prohibited from discharge into drinking water supply watersheds. This significantly reduces the risk from PPCPs. In addition, PPCPs are often associated with sludge, which is not applied to land in Connecticut, further removing PPCPs from a potential exposure stream.

### The Importance of Supply Planning

In 2007, Eastern Connecticut endured its most severe drought conditions in over two decades. At its worst point, around mid-December, Norwich reservoirs were only 56% full. NPU supply data clearly showed that precipitation plus conservation efforts on the part of residents and local businesses played a role in alleviating the supply shortage. While supplies returned to normal in early 2008, our drought experience in 2007 reminds us that water is a precious resource. A planned strategic approach to water supply management for Norwich and the region is critical. NPU's water supply planning takes into consideration several important factors:

**Planning for the Future:** Projecting how much water Norwich needs, including contingencies for drought, is a major part of the planning process. The drought of 2007 mandated the implementation of some emergency operations and communications procedures outlined in Norwich's plan. If dry conditions continued, this plan would have ensured that water remained available for as long as possible.

**Ensuring Reliability:** Water supply planning also ensures water quality and system reliability. The network of pipes, pump stations, tanks and treatment facilities must be maintained to ensure that quality water is there whenever you need it. In some areas, Norwich relies on water mains that are close to 100 years old, but are in fine working condition! In these instances, we work hard to find the balance between smart preventive maintenance and proactive pipe replacement that insures quality, reliability, and low rates.

**Protecting the Watershed:** Protecting the "watershed," or the lands around the reservoirs is important, too. Eastern Connecticut has seen development increasing over the past ten years. Making sure that the lands around Norwich's reservoirs are not placed at risk for contamination protects the community's interests for today and tomorrow. In 2007, NPU initiated a strategic purchase of land within the watershed of the Deep River Reservoir.

**Anticipating Firefighting Needs:** There are places in Norwich where supply demands have strained distribution system capabilities. NPU works closely with developers, fire officials and the planning department to make recommendations about where pipeline capacity for firefighting purposes should be upgraded. NPU works closely with other city leaders including fire officials to ensure that local building and fire regulations are updated to ensure adequate firefighting supplies.

2008 Treated Water Quality Table							
Contaminant (Units)	HIGHEST LEVEL ALLOWED BY EPA (MCL)	EPA'S GOALS (MCLG)	STONY BROOK RESERVOIR <sup>1</sup>		DEEP RIVER RESERVOIR <sup>2</sup>		MAJOR SOURCES OF CONTAMINANT IN DRINKING WATER
			NPU AVERAGE	NPU RANGE OF RECORDED VALUES	NPU AVERAGE	NPU RANGE OF RECORDED VALUES	
<b>INORGANIC COMPOUNDS</b>							
Chloride (ppm)	250	250	15	9.0 - 17.0	14	7.0 - 18.0	Runoff from road salt, natural deposits
Copper (ppm)	1.3	1.3	ND<0.04	ND<0.04	ND<0.04	ND<0.04	Corrosion of household plumbing
Fluoride (ppm)	4	4	.91	0.80 - 1.16	0.99	0.82 - 1.30	Additive that promotes strong teeth
Sodium (ppm)	28	none	14	10.0 - 15.0	10	8.0 - 14.0	Runoff from road salt, natural deposits
Nitrate (ppm)	10.0	10.0	ND<0.10	ND<0.10	ND<0.10	ND<0.10 - 0.12	Runoff from fertilizer
Nitrite (ppm)	1.0	1.0	ND<0.10	ND<0.10	ND<0.10	ND<0.10	Runoff from fertilizer
<b>MICROBIALS</b>							
Turbidity (NTU)	1	none	0.14	0.03 - 0.49	0.08	0.03 - 0.20	Soil runoff
<b>PHYSICAL CHARACTERISTICS</b>							
Color (C.U.)	15	none	0	0	0	0	
Odor (Units)	2	none	0	0	0	0	
pH	7.0 - 10.0	none	8.5	7.2 - 9.3	8.9	7.3 - 9.7	
<b>DISINFECTION BYPRODUCT PRECURSORS</b>							
Total Organic Carbon (ppm)	TT	TT	1.85	1.02 - 2.42	1.48	1.15 - 2.01	Naturally present in the environment
<b>RADIOLOGICALS</b>							
Alpha Emitters (pCi/L)	15	0	ND<3.0	ND<3.0	ND<3.0	ND<3.0	Erosion of natural deposits

<sup>1</sup> The following areas/towns are served by the Stony Brook Reservoir: Norwich (West Side and City District),Thamesville and part of Montville.

<sup>2</sup> The following areas/towns are served by the Deep River Reservoir: Norwich (City District and East Side), Norwichtown, Greenville, Taftville, Occum, Yantic, and part of Bozrah, Fitchville, Lebanon, Franklin, Preston and Lisbon.

2008 Distribution System					
Contaminant (Units)	HIGHEST LEVEL ALLOWED BY EPA (MCL)	EPA'S GOALS (MCLG)	NPU AVERAGE	NPU RANGE OF RECORDED VALUES	MAJOR SOURCES OF CONTAMINANT IN DRINKING WATER
Lead (ppm)	0.015	0.015	0.004	ND<0.001 - 0.009	Corrosion of household plumbing
Copper (ppm)	1.3	1.3	0.03	0.006 - 0.010	Corrosion of household plumbing
<b>ORGANIC COMPOUNDS</b>					
Total Trihalomethanes (ppb)	80	0	57.0	53 - 61	By-product of drinking water chlorination
Haloacetic acid (ppb)	60	0	40	15 - 63	By-product of drinking water chlorination
Chlorine	MRDL=4	MRDLG=4	0.70	0.59 - 0.88	Water additive used to control microbes

**MCL:** Maximum Contaminant Level per Liter • **MCLG:** Maximum Contaminant Level Goal • **ppm:** Parts per million (equivalent to one drop in 10 gallons) • **ppb:** Parts per billion (equivalent to one drop in 10,000 gallons) • **ND:** Not Detected • **C.U.:** Color unit (an indicator of clarity) • **TON:** Threshold Odor Number • **TT:** Treatment Technique • **NTU:** Nephelometric Turbidity Units (a measure of the presence of particles). Low NTU is an indicator of high quality water