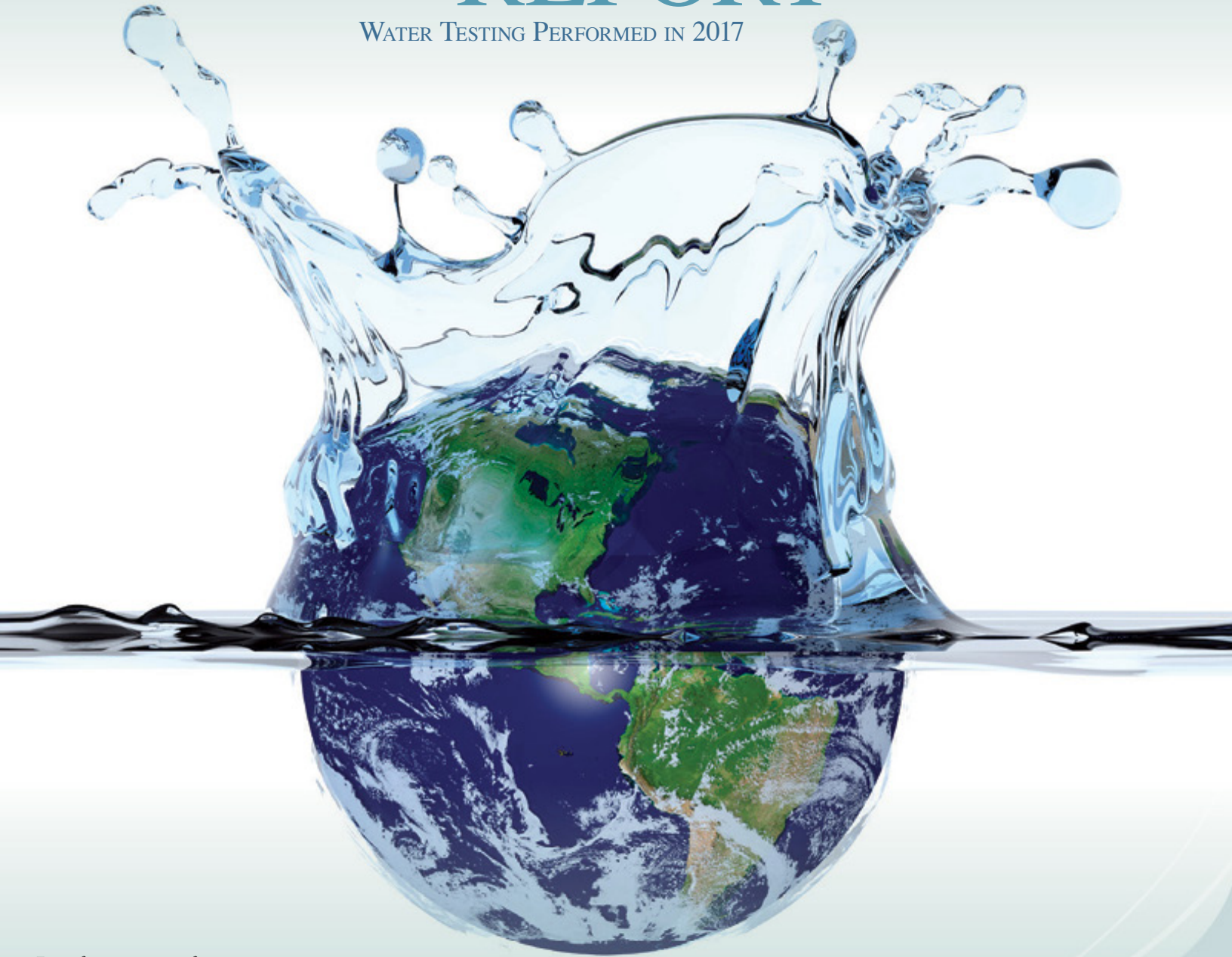# ANNUAL WATER QUALITY REPORT

WATER TESTING PERFORMED IN 2017

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

Cé rapport contient des information importantes concernant votre eau potable. Veuillez traduire, ou parlez avec quelqu' un qui peut le comprendre.

此份有关你的食水报告，内有重要资料和讯息,请找他人为你翻译及解释清楚。

Presented By

NORWICH PUBLIC UTILITIES
SINCE 1904

Norwich Public Utilities

PWS ID#: CT1040011

Quality First

Once again we are pleased to present our annual water quality report. As in years past, we are committed to delivering the best-quality drinking water possible. To that end, we remain vigilant in meeting the challenges of new regulations, source water protection, water conservation, and community outreach and education while continuing to serve the needs of all of our water users. Thank you for allowing us the opportunity to serve you and your family.

We encourage you to share your thoughts with us on the information contained in this report. After all, well-informed customers are our best allies.

Important Health Information

In 2016, NPU completed an extensive program to test our water supply for copper and lead. The results of this testing program, which is closely monitored by the State Department of Public Health, revealed that our water supply meets all federal and state standards. However, it is possible for lead and copper to be present in your home.

Sources of lead in drinking water include corrosion of household plumbing systems and 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.

Sources of copper in drinking water include corrosion of household plumbing systems, erosion of natural deposits, and 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 personal doctors.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as those with cancer undergoing chemotherapy, those who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) 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 (800) 426-4791.
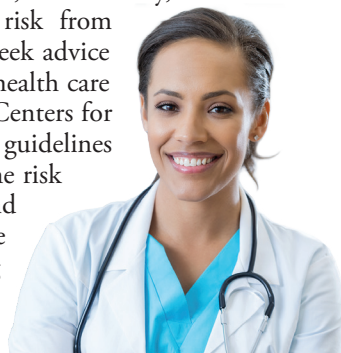
Source Water Protection

We continually monitor our reservoirs and surrounding lands to prevent potential contamination of our water supplies. Testing is performed 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)
- Analytical Consulting Technology (PH-0518)
- Baron Consulting (PH-0440)
- Environmental Consulting Laboratory (PH-0535)
- Analytical Services, Inc. (PH-0788)
- Environmental Health Laboratories (PH-0132)
- State of Connecticut laboratory (CL-117)

Source water is untreated water from streams, rivers, lakes, or underground aquifers that is used to supply public drinking water. Preventing drinking water contamination at the source is the safest and most practical approach from a public health, economic, and environmental perspective.

The public should take an active role in protecting public water sources by properly disposing of household chemicals, helping clean up watersheds that are the source of our community's water, and attending public meetings to ensure that our need for safe drinking water is considered in making decisions about land use. Contact us for more information on source water protection, or contact the U.S. Environmental Protection Agency (EPA) at (800) 426-4791.

Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water that must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk.

The sources of drinking water (both tap water 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, in some cases, radioactive material, and substances resulting from the presence of animals or from human activity. Substances that may be present in source water include:

Water treatment is a complex, time-consuming process.

Microbial Contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, or wildlife;

Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may 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 may also come from gas stations, urban stormwater runoff, and septic systems;

Radioactive Contaminants, which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

Where Does My Water Come From?

NPU customers enjoy a very safe water supply from two active reservoir sources located in Colchester and Montville. We also have two backup water supplies in Norwich. Finally, we have a groundwater well and an interconnection with another major water supplier in southeastern Connecticut, both of which serve as reserve supply in case of an emergency. Combined, our treatment facilities provide roughly 1.6 billion gallons of clean drinking water every year, or approximately 4.5 million gallons a day. Our storage tanks hold a combined 7.9 million gallons of treated water, to be delivered to your home or business through a 190-mile network of water mains.

Our distribution system is carefully maintained and tested, using chlorine for disinfection, to ensure the water coming out of your faucet is of the same high quality as when it leaves the treatment plant. Maintenance includes the regular flushing of our system to remove sediment and keep the water clear.
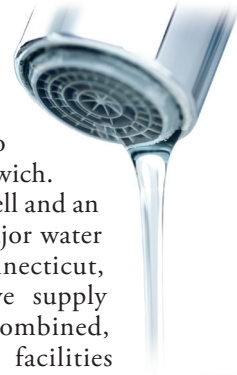
About Our Violations

The results of routine water quality samples from Sample Point ID 65 indicate locational running annual averages (LRAAs) of 85.5 and 89.68 parts per billion (ppb) for Total Trihalomethanes (TTHM) during the compliance periods ending in September and December 2017, respectively. Results of routine water quality samples from Sample Point 68 indicate LRAAs of 82.06 ppb for TTHM during the compliance period ending in December 2017. Several capital improvements completed in 2016 and being worked on in 2017 are allowing NPU to make operational changes to stabilize water quality and reduced water age, the chief contributors to the TTHM exceedances.

Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

Lead in Home Plumbing

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. We are responsible for providing high-quality drinking water, but we 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 www.epa.gov/lead.

Source Water Assessment

A water assessment of the two active reservoirs was completed by the Department of Public Health, Drinking Water Section in 2003. The assessment report can be found on the Department of Public Health Drinking Water Section's Web site at the following address: http://www.dir.ct.gov/dph/Water/SWAP/Community/CT1040011.pdf

The DPH assessment found that NPU's public drinking water sources have a low susceptibility to potential sources of contamination.

Community Participation

The Norwich Public Utilities (NPU) Board of Commissioners generally meets the fourth Tuesday of every month at 6 P.M. These meetings are open to the public and, unless otherwise noted, take place at 16 South Golden Street, Norwich. For more information about these meetings, visit norwichpublicutilities.com

QUESTIONS?

For more information about this report, or for any questions relating to your drinking water, please call us at (860) 887-2555 or email us at communitymatters@npumail.com.

Test Results

The NPU water supply is monitored for many different kinds of substances on a very strict sampling schedule. The information in the data tables shows only those substances that were detected between January 1 and December 31, 2017. Remember that detecting a substance does not necessarily mean the water is unsafe to drink; our goal is to keep all detects below their respective maximum allowed levels. The state recommends monitoring for certain substances less often than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

In 2015, NPU participated in the 3rd stage of the U.S. EPA's Unregulated Contaminant Monitoring Rule (UCMR3) program by performing additional tests on our drinking water. UCMR3 benefits the environment and public health by providing the EPA with data on the occurrence of contaminants suspected to be in drinking water, in order to determine if the EPA needs to introduce new regulatory standards to improve drinking water quality. Contact us for more information on this program.

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	Deep River Reservoir AMOUNT DETECTED	RANGE LOW-HIGH	Stony Brook Reservoir AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Nitrate (ppm)	2017	10	10	0.016	ND–0.028	0.18	ND–0.32	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Total Organic Carbon (ppm)	2017	TT	NA	1.09	0.57–1.47	1.17	0.79–1.76	No	Naturally present in the environment
Turbidity[1] (NTU)	2017	TT	NA	0.18	0.05–0.18	0.28	0.07–1.31	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2017	TT = 95% of samples meet the limit	NA	100	NA	98	NA	No	Soil runoff

Distribution System

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Chlorine (ppm)	2017	[4]	[4]	0.76	0.3–0.97	No	Water additive used to control microbes
Haloacetic Acids [HAA] (ppb)	2017	60	NA	59.25	18.7–69	No	By-product of drinking water disinfection
TTHMs [Total Trihalomethanes]–Sample Point ID 65 (ppb)	2017 (September)	80	NA	85.5	37.4–127.4	Yes	By-product of drinking water disinfection
TTHMs [Total Trihalomethanes]–Sample Point ID 65 (ppb)	2017 (December)	80	NA	89.68	37.4–127.4	Yes	By-product of drinking water disinfection

Tap water samples were collected for lead and copper analyses from sample sites throughout the community.

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH %TILE)	SITES ABOVE AL/ TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2016	1.3	1.3	0.068	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2016	15	0	3.6	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits

SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	Deep River Reservoir		Stony Brook Reservoir		VIOLATION	TYPICAL SOURCE
				AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH		
Chloride (ppm)	2017	250	NA	23	17–29	19	15–23	No	Runoff/leaching from natural deposits
Color (Units)	2017	15	NA	1	ND–4	1	ND–4	No	Naturally occurring organic materials
Fluoride (ppm)	2017	2.0	NA	0.68	0.04–0.81	0.64	0.05–0.85	No	Erosion of natural deposits; Water additive that promotes strong teeth; Discharge from fertilizer and aluminum factories
Odor (Units)	2017	3	NA	0	ND–1	0	ND–1	No	Naturally occurring organic materials
pH (Units)	2017	6.5–8.5	NA	7.83	7.10–9.4	7.9	7.1–8.3	No	Naturally occurring

UNREGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	Deep River Reservoir		Stony Brook Reservoir		TYPICAL SOURCE
		AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	
Sodium (ppm)	2017	17	7.0–25.0	13	8–19	Stormwater runoff containing road salt; Erosion of natural deposits

[1] Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the filtration system.

Definitions

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

LRAA (Locational Running Annual Average): The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters. Amount Detected values for TTHMs and HAAs are reported as the highest LRAAs.

MCL (Maximum Contaminant Level): 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.

MCLG (Maximum Contaminant Level Goal): 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.

MRDL (Maximum Residual Disinfectant Level): 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.

MRDLG (Maximum Residual Disinfectant Level Goal): 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.

NA: Not applicable

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

pCi/L (picocuries per liter): A measure of radioactivity.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

TON (Threshold Odor Number): A measure of odor in water.

SMCL (Secondary Maximum Contaminant Level): SMCLs are established to regulate the aesthetics of drinking water like appearance, taste and odor.

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