

# ANNUAL WATER QUALITY REPORT

WATER TESTING PERFORMED IN 2016

*Presented By*

**East Lyme Water and  
Sewer Commission**



## Continuing Our Commitment

Once again we present our annual drinking water report, covering all drinking water testing performed between January 1 and December 31, 2016. We have dedicated ourselves to producing drinking water that meets all state and federal standards. In a matter of only a few decades, drinking water has become exponentially safer and more reliable than at any other point in human history. Although the challenges ahead are many, we continually strive to adopt new methods for delivering the best-quality water without interruption to you and your family.

A study was completed in 2016 to evaluate filtration alternatives for Wells 1A and 2A to remove naturally occurring iron and manganese and improve water quality. Iron and manganese can affect the aesthetic quality of the water and cause discoloration issues. Of the seven wells in the East Lyme system, five are currently filtered to remove iron and manganese. The study recommended that water from Well 1A should be pumped to the existing Well 6 Water Treatment Plant, and the plant upgraded to accommodate the additional flow from Well 1A. The design of the plant upgrades is expected to be completed by December 2017, followed by construction in 2018 and 2019. The total project cost is estimated at \$3.1 million. The Connecticut Department of Public Health has made funds available for the design portion of the project through the Drinking Water State Revolving Fund (DWSRF) in the form of a loan paid over twenty years at an interest rate of 2%. The construction phase of the project is also expected to receive DWSRF funding at the appropriate time. Following the completion of the Well 1A project, steps will be taken to secure funding for treatment upgrades to Well 2A in accordance with the recommendations and findings of the study.

We are also working on the implementation of a radio-based meter reading system that would provide more efficient meter reading capability and improve customer service.

Please remember that we are always available to assist you, should you ever have any questions or concerns about your drinking water.

## Community Participation

You are invited to participate in our public forum and voice your concerns about your drinking water. We meet the fourth Tuesday of each month, beginning at 7:00 p.m., at the East Lyme Town Hall, 108 Pennsylvania Avenue, Niantic, Connecticut.

## Important Health Information

Sources of lead in drinking water includes 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 includes 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.



## QUESTIONS?

For more information about this report, or for any questions relating to your drinking water, please call Bradford C. Kargl, Municipal Utility Engineer, at (860) 739-6931.

## 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:

**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.

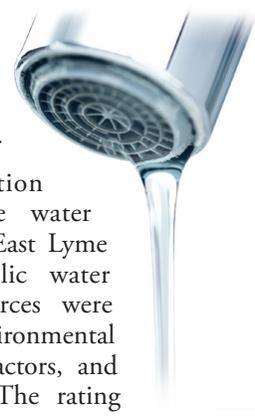
For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

## 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](http://www.epa.gov/lead).

## Source Water Assessment

The State of Connecticut Department of Public Health (DPH) in cooperation with the Department of Environmental Protection (DEP) completed source water assessments for all of the East Lyme Water Department's public water supply sources. The sources were rated based on their environmental sensitivity, potential risk factors, and source protection needs. The rating does not necessarily imply poor water quality but rather indicates susceptibility to potential sources of contamination.



The Bride Lake wellfield, which includes Well 2A, Well 3A, and Well 3B, received a low overall susceptibility rating. The remaining wellfields, which include the Gorton Pond wellfield (Well 1A and Well 6), the Dodge Pond wellfield (Well 4A), and Well 5 received moderate overall susceptibility ratings. New London's Lake Konomoc reservoir received a low susceptibility rating. The source water assessments are available on the CTDPH's Web site at [www.ct.gov/dph/publicdrinkingwater](http://www.ct.gov/dph/publicdrinkingwater). Under Resources, click Source Water Protection, and then Connecticut's SWAP Assessment Reports and Findings.

## Source Water Protection

Level A aquifer mapping has been completed for all of our water supply sources and has been approved by the state regulatory agencies. The mapping, which more accurately identifies the zone of influence for our water supply wells, is used to regulate land use activities that may affect water quality.

## Important Information About Your Drinking Water

Results of sampling completed in September 2016 were inadvertently not forwarded to the CT Department of Public Health (DPH) in time, thereby triggering the following Monitoring and Reporting Violation Notice:

Our public water system recently violated drinking water monitoring and reporting requirements. As a supplier of public drinking water, we are required to monitor the water quality of our water supply to ensure that it meets the current drinking water standards. Failure to conduct monitoring and/or to report results of such monitoring to the State Department of Public Health Drinking Water Section constitutes a violation. Although the incident was not an emergency, you as our customers, have a right to know what happened and what we did to correct this situation.

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. We did not monitor or test or did not complete all of the monitoring or testing for the requirement(s) listed below and therefore cannot be sure of the quality of our drinking water during that time:

SUBSTANCE	WSF ID	MONITORING PERIOD
Chlorine	00600	September 1, 2016 - September 30, 2016
Total Coliform	00600	September 1, 2016 - September 30, 2016
Physical Parameters	00600	September 1, 2016 - September 30, 2016

### What is being done?

The following areas have been affected: entire water distribution system.

The following steps are being taken to correct this violation: the results of the water sampling for chlorine, total coliform, and physical parameters for the September 2016 monitoring period were sent to CTDPH upon notification that they had not been received during the specified time. The contract laboratory is also providing additional internal tracking to assure the timely submittal of results.

We expect to return to compliance or resolve the situation by: 2/13/17 (date when sample results were submitted).

If you have any questions, please contact Brad Kargl at 739-6931, Ext 139 or the East Lyme Water and Sewer Commission by mail at P.O. Box 519, 108 Pennsylvania Avenue, Niantic, CT 06357.

*Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You share this information by posting this notice in a public place or distributing copies by hand or mail.*

## Where Does My Water Come From?

The Town of East Lyme customers depend on a water supply that comes from seven groundwater sources. Wells are at various locations throughout the town in two separate aquifers: the Pattagansett and Bride Brook aquifers. The water from five of the wells is filtered to remove iron and manganese, and then treated for pH adjustment, chlorine disinfection, and fluoridation. Water from the other two wells, Wells 1A and 2A, is similarly treated but not currently filtered. A sequestering agent is also added to the finished water of Well 1A and 2A. The finished water is then delivered through an extensive distribution system, including two water storage tanks and ten booster stations. During the summer months, East Lyme's supply is supplemented with water from the City of New London through a distribution network including over three miles of water mains, an elevated water storage tank, and two pumping stations. New London's water comes from lakes and reservoirs in a protected watershed that is located in Waterford, Montville, and Salem. The principal reservoir is Lake Konomoc. The water is processed using coagulation, flocculation, sedimentation, and carbon filtration, and then treated for pH adjustment, chlorine disinfection, fluoridation, and corrosion control. To learn more about the watersheds on the Internet, go to the U.S. EPA's Surf Your Watershed Web site at [www.epa.gov/surf](http://www.epa.gov/surf).

## Test Results

Our water is monitored for many different kinds of contaminants on a very strict sampling schedule. The information below represents only those substances that were detected; 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.

We 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]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Alpha Emitters (pCi/L)	2015 and 2016	15	0	3.25	ND–3.25	No	Erosion of natural deposits
Barium (ppm)	2014 and 2016	2	2	0.058	0.007–0.058	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chlorine <sup>1</sup> (ppm)	2016	[4]	[4]	1.28	0.26–1.28	No	Water additive used to control microbes
Chromium (ppb)	2014 and 2016	100	100	4	2–4	No	Discharge from steel and pulp mills; Erosion of natural deposits
Combined Radium (pCi/L)	2015 and 2016	5	0	0.93	ND–0.93	No	Erosion of natural deposits
Fluoride <sup>2</sup> (ppm)	2016	4	4	1.25	0.58–1.25	No	Erosion of natural deposits; Water additive that promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAAs] (ppb)	2016	60	NA	31	ND–31	No	By-product of drinking water disinfection
Nitrate (ppm)	2016	10	10	3.51	0.78–3.51	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
TTHMs [Total Trihalomethanes] (ppb)	2016	80	NA	51.7	6.2–51.7	No	By-product of drinking water disinfection
Turbidity <sup>3</sup> (NTU)	2016	5	NA	1.40	ND–1.40	No	Soil runoff
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	0.47	0/33	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2016	15	0	2.00	0/33	No	Corrosion of household plumbing systems; Erosion of natural deposits
SECONDARY SUBSTANCES							
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Chloride (ppm)	2014 and 2016	250	NA	55.9	41.0–55.9	No	Runoff/leaching from natural deposits
Sulfate (ppm)	2014 and 2016	250	NA	18.2	9.6–18.2	No	Runoff/leaching from natural deposits; Industrial wastes

## UNREGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Sodium <sup>4</sup> (ppm)	2016	38.8	9.8–38.8	Naturally occurring; road salt

## UNREGULATED CONTAMINANT MONITORING RULE - PART 3 (UCMR3)

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Chlorate (ppb)	2015	710	180–710	By-product of drinking water disinfection
Chromium, Hexavalent (ppb)	2015	0.25	0.07–0.25	Erosion of natural deposits
Chromium (ppb)	2015	0.40	0.35–0.40	Erosion of natural deposits
Strontium (ppb)	2015	131	63–131	Erosion of natural deposits

<sup>4</sup>**Sodium Notice – Be advised that when the sodium concentration exceeds 28 ppm, people who have been placed on a sodium-restricted diet should inform their physician.**

<sup>1</sup>The value reported under Amount Detected is the highest monthly average for the 12-month period for the East Lyme treated water sources. When receiving water from New London during the summer months, approximately a three-month period, the highest monthly average is 1.28 ppm. During the non-summer months, the highest monthly average is 0.66 ppm.

<sup>2</sup>The value reported under Amount Detected is the highest monthly average for the 12-month period.

<sup>3</sup>Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of water quality and the effectiveness of disinfectants.

## 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 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).

**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.