Annual

WATER QUALITY REPORT

Reporting Year 2013

Presented By
East Lyme
Water and Sewer Commission

PWS ID#: CT0450011

There When You Need Us

Once again we present our annual water quality report covering testing performed between January 1 and December 31, 2013. We are committed to producing drinking water that meets all state and federal standards and continually strive to adopt new methods for delivering the best-quality drinking water to you.

We face new challenges as our community grows, regulatory burden increases, and the water system infrastructure ages. The water interconnection between East Lyme and New London's water treatment plant at Lake Konomac will help to meet those challenges by supplying water to manage peak demands during the summertime and providing system redundancy during water supply emergencies. Also, by sending water in both directions depending on the season, a water balance can be achieved that will minimize the impact on existing water resources. The interconnection will be on line this summer but will not reach full operational capacity until next year.

In the next few years, other initiatives are being considered to improve water quality, customer service, and system reliability. They include filtration at Wells 1A and 2A, implementation of a radio-based meter reading system, and water main rehabilitation.

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

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, which 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.

How Long Can I Store Drinking Water?

The disinfectant in drinking water will eventually dissipate even in a closed container. If that container housed bacteria before it was filled with the tap water, the bacteria may continue to grow once the disinfectant has dissipated. Some experts believe that water could be stored up to six months before needing to be replaced. Refrigeration will help slow the bacterial growth.

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 pm at the East Lyme Town Hall, 108 Pennsylvania Avenue, Niantic.

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. Our water supply is part of the Pattagansett and Bride Brook aquifers. To learn more about our watershed on the Internet, go to the U.S. EPA's Surf Your Watershed Web site at www.epa.gov/surf.

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 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/safewater/lead.

Benefits of Chlorination

Disinfection, a chemical process used to control disease-causing microorganisms by killing or inactivating them, is unquestionably the most important step in drinking water treatment. By far, the most common method of disinfection in North America is chlorination.

Before communities began routinely treating drinking water with chlorine (starting with Chicago and Jersey City in 1908), cholera, typhoid fever, dysentery, and hepatitis A killed thousands of U.S. residents annually. Drinking water chlorination and filtration have helped to virtually eliminate these diseases in the U.S. Significant strides in public health are directly linked to the adoption of drinking water chlorination. In fact, the filtration of drinking water plus the use of chlorine is probably the most significant public health advancement in human history.

How chlorination works:

Potent Germicide Reduction in the level of many disease-causing microorganisms in drinking water to almost immeasurable levels.

Taste and Odor Reduction of many disagreeable tastes and odors like foul-smelling algae secretions, sulfides, and odors from decaying vegetation.

Biological Growth Elimination of slime bacteria, molds, and algae that commonly grow in water supply reservoirs, on the walls of water mains, and in storage tanks.

Chemical Removal of hydrogen sulfide (which has a rotten egg odor), ammonia, and other nitrogenous compounds that have unpleasant tastes and hinder disinfection. It also helps to remove iron and manganese from raw water.

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 more accurately identifies the zone of influence for our water supply wells and will be used in the future to regulate land use activities that may affect water quality.

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 indicates susceptibility to potential sources of contamination.

The Bride Lake well field includes Well 2A, Well 3A, and Well 3B and received a low overall susceptibility rating. The remaining well fields, which include the Gorton Pond well field (Well 1A and Well 6), the Dodge Pond well field (Well 4A), and Well 5 received moderate overall susceptibility ratings. The source water assessments are available on the Connecticut Department of Public Health, Drinking Water Division's Web site at www.dph.state.ct.us/BRS/water/dwd.htm.

Important Health Information

Sources of lead in drinking water includes corrosion of household plumbing system 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 system, 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 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.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons 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.

Sampling Results

During the past year we have taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic or synthetic organic contaminants. The table below shows only those contaminants that were detected in the water. The state requires us to monitor for certain substances less 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.

REGULATED SUBSTANCES

				Distribution		Well 1A		Well 2A		Well 3A/3B		Well 4A		Well 5		Well 6			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Alpha Emitters (pCi/L)	2013	15	0	NA	NA	ND	NA	ND	NA	ND	NA	ND	NA	3.00	NA	ND	NA	No	Erosion of natural deposits
Chlorine[1] (ppm)	2013	[4]	[4]	NA	NA	0.65	0.27–0.65	0.35	0.22–0.35	0.56	0.23–0.56	0.53	0.18–0.53	0.54	0.31–0.54	0.44	0.22–0.44	No	Water additive used to control microbes
Combined Radium (pCi/L)	2013	5	0	NA	NA	1.13	NA	0.93	NA	0.53	ND–0.53	0.11	NA	0.81	NA	0.45	NA	No	Erosion of natural deposits
Fluoride[1] (ppm)	2013	4	4	NA	NA	1.00	0.79–1.00	1.48	0.90–1.48	0.86	0.72–0.86	0.94	0.76–0.94	0.94	0.72–0.94	0.94	0.75–0.94	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAA]–Stage 1 (ppb)	2013	60	NA	3.0	ND–3.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	No	By-product of drinking water disinfection
Nitrate (ppm)	2013	10	10	NA	NA	1.02	NA	0.35	NA	0.28	NA	3.52	NA	1.45	NA	0.98	NA	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
TTHMs [Total Trihalomethanes]–Stage 1 (ppb)	2013	80	NA	15.2	2.5–15.2	9.4	ND–9.4	ND	NA	2.1	1.2–2.1	0.5	ND–0.5	ND	NA	ND	NA	No	By-product of drinking water disinfection
Tetrachloroethylene (ppb)	2013	5	0	NA	NA	0.6	ND–0.6	ND	NA	ND	NA	ND	NA	ND	NA	0.5	0.5–0.6	No	Discharge from factories and dry cleaners
Turbidity[2] (NTU)	2013	5	NA	0.6	ND–0.6	0.7	ND–0.7	0.5	ND–0.5	0.5	ND–0.5	0.5	ND–0.5	0.7	ND–0.7	0.6	ND–0.6	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)	2013	1.3	1.3	0.54	0/120	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2013	15	0	3	1/120	No	Corrosion of household plumbing systems; Erosion of natural deposits

SECONDARY SUBSTANCES

				Well 1A		Well 2A		Well 3A/3B		Well 4A		Well 5		Well 6			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Chloride (ppm)	2011	250	NA	35	NA	30	NA	29	NA	41	NA	13	NA	50	NA	No	Runoff/leaching from natural deposits
Sulfate (ppm)	2011	250	NA	ND	NA	ND	NA	11	NA	12	NA	11	NA	18	NA	No	Runoff/leaching from natural deposits; Industrial wastes

OTHER UNREGULATED SUBSTANCES

		Well 1A		Well 2A		Well 3A/3B		Well 4A		Well 5		Well 6		
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
MTBE [Methyl tert-Butyl Ether] (ppb)	2013	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	2.8	ND–2.8	Petroleum tanks above and below ground
Sodium* (ppm)	2013	34	25–34	28	19–28	18[3]	17–18[3]	41	33–41	17	11–17	32	28–32	Naturally occuring; road salt

***Sodium Notice - Be advised that when the sodium concentration exceeds 28 ppm, anyone who has been placed on a sodium restricted diet should inform their physician**

[1] The values reported under Amount Detected are the highest monthly averages for the 12-month period.
[2] 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.
[3] Sampled in 2012.

Definitions

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

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).

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