ANNUAL WATER QUALITY REPORT

Reporting Year 2022

Presented By

East Lyme Water and Sewer Commission

PWS ID#: CT0450011

Our Mission Continues

We are once again pleased to present our annual water quality report covering all testing performed between January 1 and December 31, 2022. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal standards. We continually strive to adopt new methods for delivering the best-quality drinking water to you. As new challenges to drinking water safety emerge, we remain vigilant in meeting the goals of source water protection, water conservation, and community education while continuing to serve the needs of all our water users. Please remember that we are always available should you ever have any questions or concerns about your water.

Source Water Protection

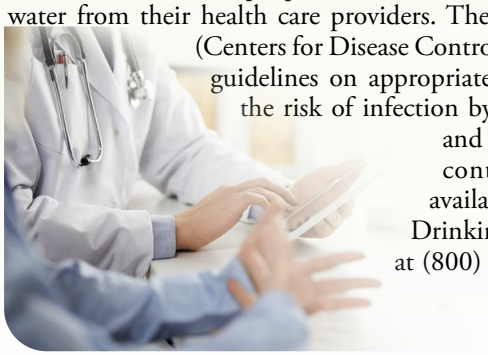
Level A aquifer mapping has been completed for all our water supply sources and approved by the state regulatory agencies. The mapping more accurately identifies the zone of influence for our water supply wells and is used to regulate land use activities that may affect water quality.

Important Health Information

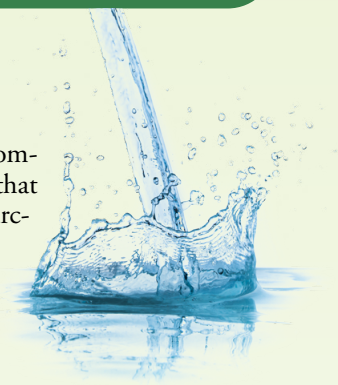
Sources of lead in drinking water include corrosion of household plumbing systems and erosion of natural deposits. Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in 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 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.



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 located throughout the town in two separate aquifers, Pattagansett and Bride Brook. The water from six of the wells is filtered to remove iron and manganese and then treated for pH adjustment, chlorine disinfection, and fluoridation. Well 2A is similarly treated but not filtered for iron and manganese. A sequestering agent is added to the finished water of Well 2A to mitigate issues arising from these substances. A construction project for filtration of this source as well is currently underway and should be completed by fall 2023.

The treated water from these wells is delivered through an extensive distribution system including three storage tanks and 10 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 main, an elevated 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 our watershed online, visit U.S. EPA's How's My Waterway at www.epa.gov/waterdata/hows-my-waterway.

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 at 7:00 p.m. at the East Lyme Town Hall, 108 Pennsylvania Avenue, Niantic.

QUESTIONS? For more information about this report, or for any questions relating to your drinking water, please contact Ben North, Municipal Utilities Engineer, at (860) 691-4104 or watersewer@eltownhall.com.

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.

Lead in Home Plumbing

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 and removing lead pipes but cannot control the variety of materials used in plumbing components in your home. You share the responsibility for protecting yourself and your family from the lead in your home plumbing. You can take responsibility by identifying and removing lead materials within your home plumbing and taking steps to reduce your family's risk. Before drinking tap water, flush your pipes for several minutes by running your tap, taking a shower, or doing laundry or a load of dishes. You can also use a filter certified by the American National Standards Institute to reduce lead in drinking water. Contact us if you are concerned about lead in your water and wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available at http://www.epa.gov/safewater/lead.

Water Treatment Process

The treatment process consists of a series of steps. First, raw well water is pumped from our aquifers and sent to pressurized filter vessels where chlorine is added for oxidation and removal of naturally occurring high iron and manganese concentrations. At this point, the water is filtered through layers of fine carbon and silicate sand. As smaller suspended particles are removed, turbidity disappears and clear water emerges.

Chlorine is added again as a precaution against any bacteria that may still be present and to maintain a safe residual in the distribution system. We carefully monitor the amount of chlorine, adding the lowest quantity necessary to protect the safety of your water without compromising taste. Finally, the pH is adjusted for corrosion control, and fluoride is added to prevent tooth decay and promote healthy teeth. The treated water is then pumped though roughly 114 miles of distribution piping to three water towers across town and into your home or business.

Source Water Assessment

The Connecticut Department of Public Health (DPH), in cooperation with the Department of Energy and Environmental Protection, completed assessments for all the East Lyme Water Department's public water supply sources. The sources were rated based on their environmental sensitivity, potential risk factors, and 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 Wells 2A, 3A, and 3B and received a low overall susceptibility rating. The remaining well fields, which include Gorton Pond (Wells 1A and 6), Dodge Pond (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 at https://portal.ct.gov/DPH/Drinking-Water/DWS/Source-Water-Assessment-Program.

Testing Results

Our water is monitored for thousands of substances on a very strict sampling schedule every year. The water we deliver must meet specific health standards prescribed by U.S. EPA. Here, we only show those substances that were detected in our water (a complete list of all our analytical results is available upon request). Remember that detecting a substance does not mean the water is unsafe to drink; our goal is to keep all detects below their respective maximum allowed levels.

Unless otherwise noted, U.S. EPA requires us to report these substances in a very specific way for this annual report. For example, the concentration of a substance displayed in the Amount Detected column of the table is simply the level of the highest-recorded sample of that substance for the given year, not a systemwide average of all the samples taken. In most cases, the average concentration of a substance is much lower than the Amount Detected. Chlorine, for instance, is sampled approximately 3,000 times per year, and averages 0.7 milligram per liter, or part per million (ppm), systemwide, and yet the Amount Detected is 1.92 ppm - the highest value taken out of the 3,000 samples.

The state recommends monitoring 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*

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Barium (ppm)	2020	2	2	0.089	0.008–0.089	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Beta/Photon Emitters (pCi/L)	2021	50[1]	0	28.7	ND–28.7	No	Decay of natural and human-made deposits
Chlorine (ppm)	2022	[4]	[4]	1.92	0.2–1.92	No	Water additive used to control microbes
Chromium (ppb)	2021	100	100	2	1–2	No	Discharge from steel and pulp mills; erosion of natural deposits
Fluoride (ppm)	2022	4	4	1.38	0.14–1.38	No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Haloacetic Acids [HAAs]–Stage 2 (ppb)	2022	60	NA	9.975[2]	1.3–13.3	No	By-product of drinking water disinfection
Nitrate (ppm)	2022	10	10	4.20	0.02–4.20	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
TTHMs [total trihalomethanes]–Stage 2 (ppb)	2022	80	NA	26.3[2]	9.4–45.4	No	By-product of drinking water disinfection
Turbidity[3] (NTU)	2022	TT	NA	0.35	ND–0.35	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 %ILE)	RANGE LOW-HIGH	SITES ABOVE AL/ TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2022	1.3	1.3	0.69	ND–1.20	0/125	No	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb)	2022	15	0	1	ND–4	0/125	No	Lead service lines; corrosion of household plumbing systems, including fittings and fixtures; erosion of natural deposits

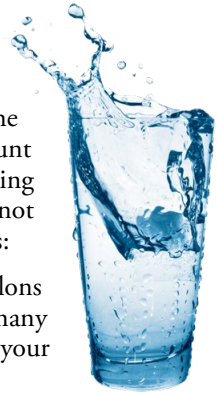
*Unless otherwise noted, Amount Detected is the highest-recorded sample of that substance for a given year, not a systemwide average of all samples taken.

SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Chloride (ppm)	2022	250	NA	73.8	59.8–73.8	No	Runoff/leaching from natural deposits
Iron (ppb)	2022	300	NA	142	ND–142	No	Leaching from natural deposits; industrial wastes
Manganese (ppb)	2022	50	NA	532	ND–532	No	Leaching from natural deposits
pH (units)	2022	6.5-8.5	NA	7.97	7.00–7.97	No	Naturally occurring
Sulfate (ppm)	2022	250	NA	13.3	ND–13.3	No	Runoff/leaching from natural deposits; industrial wastes

[1] The MCL for beta particles is 4 millirems per year. U.S. EPA considers 50 pCi/L to be the level of concern for beta particles.
[2] Highest locational running annual average.
[3] 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.

Water Conservation Tips



You can play a role in conserving water and save yourself money in the process by becoming conscious of the amount of water your household is using and looking for ways to use less whenever you can. It is not hard to conserve water. Here are a few tips:

- Automatic dishwashers use four gallons for every cycle, regardless of how many dishes are loaded. So get a run for your money and load it to capacity.
- Turn off the tap when brushing your teeth.
- Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it and you can save almost 6,000 gallons per year.
- Check your toilets for leaks by putting a few drops of food coloring in the tank. Watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from an invisible toilet leak. Fix it and you save more than 30,000 gallons a year.
- Use your water meter to detect hidden leaks. Simply turn off all taps and water-using appliances. Then check the meter after 15 minutes. If it moved, you have a leak.

Definitions

90th %ile: The levels reported for lead and copper represent the 90th percentile of the total number of sites tested. The 90th percentile is equal to or greater than 90% of our lead and copper detections.

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).

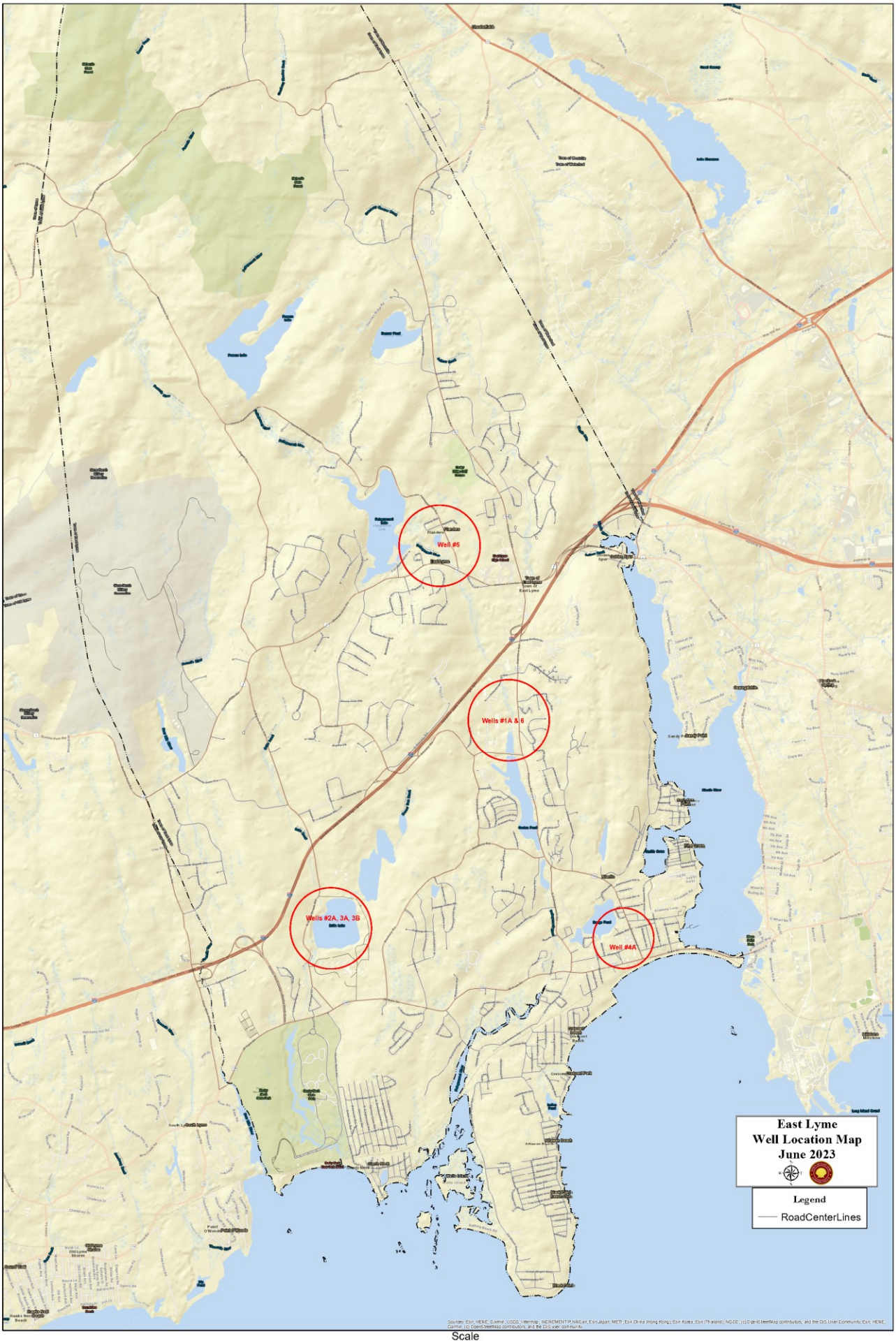
SMCL (Secondary Maximum Contaminant Level): These standards are developed to protect aesthetic qualities of drinking water and are not health based.

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

East Lyme Water
2022 Water Quality by Well Site

The below data is meant to supplement the 2023 Consumer Confidence Report and provide location specific water quality data to East Lyme Water customers. Although the water is blended in the distribution system, it may be helpful to see the water quality data by source. Water Treatment Plant and well locations can been seen on the attached map titled: " Well Location Map June 2023".

Name	MCL [MRDL]	MCLG [MRDLG]	Well 1A &6 WTP			Well 2A			Bride Brook WTP (Well 3A & 3B)			Well 4 WTP			Well 5 WTP		
			Average Amount Detected	Highest Amount Detected	Range	Average Amount Detected	Highest Amount Detected	Range	Average Amount Detected	Highest Amount Detected	Range	Average Amount Detected	Highest Amount Detected	Range	Average Amount Detected	Highest Amount Detected	Range
Chlorine Residual (ppm)	4	4	0.76	1.31	0.22 - 1.31	0.65	1.38	0.22 - 1.38	0.76	1.17	0.2 - 1.17	0.69	1.10	0.2 - 1.1	0.71	1.92	0.22 - 1.92
Chloride (ppm)	250	NA	56.36	62.00	0.18 - 0.98	22.35	29.40	0.22 - 0.91	46.33	51.90	0.33 - 1.63	61.45	71.00	0.45 - 0.95	33.02	47.60	0.35 - 1.81
Iron (ppb)	300	NA	14.67	17.00	11 - 17	18.80	36.00	11 - 36	16.00	16.00	16 - 16	13.50	14.00	13 - 14	14.80	19.00	12 - 19
Manganese (ppb)	50	NA	2.00	2.00	2 - 2	462.42	532.00	338 - 532	4.00	4.00	4 - 4	1.50	2.00	1 - 2	13.00	13.00	13 - 13
Hardness (ppm as CaCO3)	NA	NA	46.32	54.10	34.6 - 54.1	29.43	32.70	27.2 - 32.7	28.03	30.70	24.6 - 30.7	45.83	53.60	40.1 - 53.6	25.98	31.00	22.9 - 31
Turbidity (NTU)	NA	NA	<0.2	<0.2	<0.2-<0.2	<0.2	<0.2	<0.2-<0.2	0.22	0.24	0.2 - 0.24	0.33	0.35	0.31 - 0.35	<0.2	<0.2	<0.2-<0.2
pH	NA	6.5-8.5	7.25	7.97	7 - 7.97	7.45	7.82	7 - 7.82	7.24	7.88	7 - 7.88	7.31	7.87	7 - 7.87	7.45	7.59	7 - 7.59
Sodium (ppm)	NA	NA	32.92	38.40	28.1 - 38.4	18.78	22.80	16.5 - 22.8	29.90	32.30	26.8 - 32.3	37.66	43.70	32.5 - 43.7	24.20	31.90	14.1 - 31.9


Well #5
Wells #1A & 6
Wells #2A, 3A, 3B
Well #4A
East Lyme
Well Location Map
June 2023
Legend
RoadCenterLines
Scale
0 800 1,600 3,200 4,800 6,400
Feet