

Putnam Water Pollution Control Authority

2018 ANNUAL WATER QUALITY REPORT

PWS #CT1160011

Continuing Our Commitment

The Town of Putnam is pleased to present the Annual Water Quality Report for 2018. Federal and State regulations require that public water systems publish a yearly water quality report. We feel it is important that you know where your water comes from as well as how it is treated and what substances may be in it.

What's New with Our Water System

2018 was another busy year for the Water Department as several Major Capital Improvement Projects came to an end. The final phase of the Pipe Replacement / Relining Project was finished with a total of approximately 52,000 linear feet being replaced or relined which equates to just under 25% of all the pipes in our system. The Water Department did an extensive study of the pipe network system before the project began to determine which pipes needed replacing first. The Richmond Hill Water Storage Tank Rehabilitation Project has received the approval of the CT. Department of Public Health (CT DPH). This project had to be rescheduled to begin in the fall of 2019. The Manganese and Iron Removal Biological Filtration Project at the Well Field was completed and put On-Line in August 2018. This new treatment process is working far better than expected whereas we are removing 99 to 100% (we expected a 90 to 95% removal rate) of all the Manganese and Iron from the well water. The Manganese and Iron is what caused the discoloration in the water throughout many parts of the Water System. We anticipate that after we complete the 2019 Hydrant / System Flushing Program any remaining residual Manganese or Iron will be removed from the entire Water System.

For more information about this annual report, or for any questions relating to your drinking water, please call Brian Lynch, Superintendent of the Putnam WPCA @ 860-963-6819 or the Water Treatment Plant @ 860-963-6823.

Community Participation

If you have concerns about your drinking water or water supply, you are invited to attend the WPCA monthly meetings. For dates and times of committee meetings please call our main office at, 860-963-6819 or visit the Town of Putnam website @ www.putnamct.us

Where Does My Water Come From?

We currently have three (3) stable sources of water. Our first source of supply comes from Roseland Lake (Little River Watershed), which converges into the Little River. Our second source of supply is from our Park Street Well Field which consists of ten production wells, six (6) which are shallow sand and gravel packed wells and four (4) deep bedrock wells. Our third source is via an interconnection with the CT Water Company, Crystal Division, located in Killingly.

How is My Water Treated?

The water treatment process from the surface water supply (the Little River) consists of a series of five key steps. Initially the water is drawn from the River and pre-disinfected with chlorine dioxide and chlorine. This step allows for oxidation of iron, manganese and total organic carbon that are present in the raw water. This pretreated water enters a mixing tank where poly aluminum chloride is added allowing small particles to adhere to one another (called "floc") making them heavy enough to settle out of the water. The water is then processed through a filtering unit where any remaining smaller floc particles are removed, turbidity disappears and clean water emerges. Chlorine is added in the final disinfection step as a precaution against any bacteria that may still be present. We closely monitor the amount of chlorine, adding the lowest quantity necessary to protect the safety of your water without compromising taste. The final chemical injection steps are taken by adding Potassium Hydroxide to adjust the pH of the water and an Ortho

Polyphosphate (corrosion inhibitor) to protect the pipes. The water is then pumped to our two, one million gallon water storage tanks from which it is distributed into your home.

The well water is treated at the Well Field by a new process which was mentioned in the *“What’s New”* statement of this report. The old process was simple chemical treatment with the addition of Ortho Polyphosphate (corrosion inhibitor), Potassium Hydroxide for pH adjustment and sodium hypochlorite for disinfection before being pumped directly to the Water System. Using the new Biological Filtration process which is a little more involved, we start by blending and mixing the well water, using two or more of the ten wells, in the existing treatment building. The blended water is then diverted into the New Filtration Building where Potassium Hydroxide and Dissolved Oxygen is injected into the water before entering into the filter vessels. The water then passes through the Iron Filters then through the Manganese Filters where the biological microbes do their job. The water then enters a storage tank before being pumped to the water system. The final treatment chemicals, Sodium Hypochlorite for disinfection and Phosphate for corrosion control, are added at this point. The treatment process at both the Surface Water Treatment Plant and the Well Field are continuously monitored by instrumentation and State Certified Water Treatment Operators to ensure safe clean water is being produced and distributed to your homes.

Substances That Might Be in Drinking Water

In order to ensure that tap water is safe to drink, the Department of Public Health and the U.S. Environmental Protection Agency (USEPA) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) and the Connecticut Department of Public Health regulations establish limits for contaminants in bottled water that must provide the same protection for public health. All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate the water poses a health risk.

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

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

Inorganic Contaminants, such as road salt and metals, which can be naturally occurring or may result from urban storm water 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.

Table 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. MCL’s are set as close to the MCLG as feasible using the best available technology. Secondary MCL’s (SMCL) are set to protect the odor, taste and appearance of drinking water.

MCLG (Maximum Contaminant Level Goal): The level of a contaminant in drinking water below which there is no known risk to health. MCLG’s allow for a margin of safety.

NA: Not applicable **ND:** Not detected **NS:** No standard

NTU (Nephelometric Turbidity Unit): Measurement of the clarity, or turbidity, of water

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.

Turbidity: A measurement of how cloudy the water is. We monitor this because it is a good indicator of the effectiveness of our filtration system.

90th Percentile: Out of every 10 homes sampled, 9 were at or below this level

Is My Water Safe?

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 at the end of this report shows only those contaminants that were detected in the water. Although all the substances listed here are under the Maximum Contaminant Level (MCL), we feel it is important that you know exactly what was detected and how much of the substance was present in the water. The state requires us to monitor for certain substances less than once per year because the concentration of these substances do not change frequently. In these cases, the most recent sample data are included; along with the year in which the samples were taken.

Please see the table at the end of this report for the substances that were detected in your drinking water.

Monitoring and Reporting of Compliance - Violation Notes:

During the entire 2018 sampling period we had zero compliance violations.

Frequently Asked Questions.

Why is my water brown sometimes?

Typical causes of discolored water include fire in the area, a water-main break, hydrant maintenance, or water main flushing and road construction.

Why does my water look cloudy or milky?

Air becomes trapped in the lines. This trapped air becomes suspended in the water, giving it a milky appearance.

When I run the water, it smells.

Most of the time it is not the water, but rather, food particles that are left in the drain overnight. When the water is run, the odor is forced out. Putting a small amount of bleach in the drain overnight, periodically, will remove the odors.

Is Tap Water Safe for Everyone?

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised 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. 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. (800-426-4791)

<p>In 2018 Putnam Water produced 343,245,600 gallons of water from the following sources. 96,984,800 gallons from the Little River, 226,749,600 from the Park Street Well Field and 19,511,200 from the CT Water Co. Interconnection on Tracy Rd.</p>
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SWAP

The Source Water Assessment Program (SWAP), established under the Federal Safe Drinking Water Act, requires every state to: inventory land uses within the recharge areas of all public water supply sources; assess the susceptibility of drinking water sources to contamination from these land uses; and publicize the results to provide support for improved protection. **Below is an overview of the Putnam source water assessment.**

Little River Diversion Source Water Assessment

The Overall Susceptibility Rating: **HIGH**

This rating indicated susceptibility to potential sources of contamination that may be in the source water area and does not necessarily imply poor water quality.

Strengths: There are no point source pollution discharge points present in the watershed area.

Potential Risk Factors:

ENVIRONMENTALLY SENSITIVE This source carries a high risk factor specifically for environmental sensitivity. The reservoir is able to support excessive growth of algae and plankton. Potential contaminant sources are present in the watershed and homeowners are encouraged to adopt residential best management practices that minimize the use of hazardous wastes or generation of waste in the watershed.

Potential Risk Factors This source carries a moderate risk factor as major state and interstate roadways are present in the watershed and there are known contaminant release points present in the watershed. There should be monitoring for road salt and herbicides as well as addressing the potential for hazardous spills from vehicular accidents. More than 50% of land for this source water is underdeveloped, which could present a risk if inappropriately developed.

Source Protection Needs This source carries a high rating as less than 1% of the land is owned by the public water system and less than 5% exists as open space. It is advisable to increase ownership or control of watershed area whenever land becomes available for purchase. It is also recommended to establish local watershed protection regulations to protect public drinking water sources.

Park St Well Field Assessment

The Overall Susceptibility Rating: **MODERATE**

This source carries the same recommendations as that of the Little River Diversion Assessment for Potential Risk Factors.

For the complete report on the Internet please go to: State of Connecticut Department of Public Health-Drinking Water Division- Source Water Assessment Report- Town of Putnam, CT PWS # CT1160011

Special Warning about the Health Effects of Lead & Copper:

Although all of our test results indicate we were well below the action levels for Lead and Copper we are required to inform our customer of the possible health effects of these contaminants.

Lead – *Major Sources in Drinking Water* from corrosion of household plumbing systems including piping and fixtures and from erosion of natural deposits in the environment.

Health Effects Statement: Infants and children who drink water containing lead in excess of the action level could experience delays in their physical 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.

Copper – *Major Sources in Drinking Water* from corrosion of household plumbing systems, erosion of natural deposits or from leaching from wood preservatives.

Health Effects Statement: 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.

Additional information on Lead and Copper is available from the Safe Drinking Water Hotline (800-426-4791).

Water Conservation:

The Putnam Water Department and the Town of Putnam continue to be proactive on water conservation projects. Most of the projects mentioned in the opening statement have water conservation potential including the Water Meter Replacement Project. The new meters have Smart meter technology whereas they can detect high water consumption and alerts the Water Department to notify the customers of potential interior leaks to help prevent high bills and wasted water. The Town of Putnam also requests that any new building construction or major renovation projects be completed using water saving devices and fixtures.

Source Water Protection Plan:

The Town of Putnam has adopted a Source Water Protection Plan that includes a number of action items to protect our Aquifer Protection Area containing the Park Road Well Field. The Putnam Zoning Commission is the responsible town agency for implementation of the Plan. This includes installation and monitoring of sentinel wells, public education for the various users in the Aquifer Protection Area, including the Providence & Worcester Railroad, industries, Algonquin Pipeline Co., residences and emergency response personnel; an inspection and maintenance program for storm water sewers, and elimination, as much as practicable, of roadway storm water discharges. This Plan will be continually reviewed and updated as required by changing circumstances within the Aquifer Protection Area. The Putnam WPCA is committed to protect and preserve this vital source of water.

Substances that were Detected in Your Drinking Water

Regulated Substances	Unit of Measure	Year Sampled	MCL	MCLG	Amount Detected	Range Low – High	Violation	Typical Source
Barium	ppm	2018	2.00	0	0.010	0.009 - 0.010	No	Erosion of natural deposits. Discharge from metal refineries. Discharge of drilling wells
Fluoride	ppm	2018	4.00	n/a	0.10	0.0 – 0.10	No	Naturally occurring. We do not Fluoridate.
Chloride	ppm	2018	250	0	23.7	20.0 – 27.4	No	Naturally occurring, Road Salt
Chlorine	ppm	2018	4	4	1.27	0.50 – 1.74	No	Water additive used to control microbes
Chlorine Dioxide	ppm	2018	0.8	0	0.03	0 - .09	No	Water additive used to control microbes
Chlorites (Entry Point)	ppm	2017	1.00	0.8	0.79	0.49 - 1.0	No	By - products of drinking water disinfection
Chlorites (Distribution)	ppm	2018	1.00	0.8	0.36	.01 - .79	No	By - products of drinking water disinfection
Nickel	ppm	2018	0.1	0	0.000	0.0 – .000	No	Erosion of natural deposits, Metal refineries
Pesticides	ppb	2018	0	0	ND	n/a	No	Chemicals used to control or kill insects.
Herbicides	ppb	2018	0	0	ND	n/a	No	Chemicals used to control or kill weeds.
Total Haloacetic Acids	ppb	2018	60	n/a	20.2 +	2.8 – 38.0*	No	By - product of drinking water chlorination
Total Trihalomethanes	ppb	2018	80	n/a	25.0 +	8.6 – 41.3*	No	By - product of drinking water chlorination
Nitrate	ppm	2018	10	0	0.58	0.55 - 0.60	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Lead	ppb	2018	15.0	0	1.7 (90 th %-tile)	0 – 2.1	No	Corrosion of household plumbing systems; Erosion of natural deposits
Copper	ppm	2018	1.30	0	0.49 (90 th %-tile)	0.03 - .54	No	Corrosion of household plumbing systems, Erosion-
Sulfate	ppm	2018	250	0	12.0	12.0 – 12.0	No	Naturally occurring in the environment
Turbidity	NTU	2018	TT = 1.0 NTU	n/a	0.109	0.033 - 0.109	No	Soil run – off
Turbidity (Lowest monthly % of samples meeting limit)	NTU	2018	TT = % of sample <.3 NTU	100 %	100%	n/a	No	Soil run – off
Total Organic Carbon (TOC)	ppm	2018	TT	n/a	66% Removal (45% is required)	54% - 84% Removal	No	Naturally present in the environment
Sodium	ppm	2018	28	0	13.4	n/a – 13.4	No	Naturally occurring, Road Salt

Total Coliforms	Colonies	2018	0	0	ND	n/a	No	Naturally present in the environment
E-Coli	Colonies	2018	0	0	ND	n/a	No	Fecal waste from warm blooded animals and / or humans

* The range of Results represent the lowest and highest individual detection during the monitoring year.

+ Amount detected equates to the highest running annual average

