



Weir River Water System
185 Lincoln Street, Unit 200B
Hingham, MA 02043

Operated by: SUEZ

Annual Water Quality Report

Water testing performed in calendar year 2020

Weir River Water System
PSWID: 4131000



Water Commissioners
Mary Power
Joe Fisher
Bill Ramsey

ABOUT THE WEIR RIVER WATER SYSTEM

Where does your water come from?

The water delivered to our Hingham, Hull and North Cohasset customers is obtained from several surface water and ground water supplies. Surface water is diverted from Accord Brook and pumped from Accord Pond to our centrally located water treatment facility. Ground water from our 11 active drinking water supply wells is also pumped to our water treatment facility, where the water is blended together and then treated. The treated water is then pumped to our customers using a network of over 192 miles of pipe and two water storage tanks. Our water supply system is all located within the Weir River Watershed and provides water for approximately 30,500 people during the winter and 41,100 people in the summer.

The average amount of water delivered during 2019 was 3.27 million gallons per day. On average, 115,951 gallons per day was pumped through the Cohasset interconnection. In addition, our distribution system has emergency interconnections with the Weymouth and Norwell water systems.

PFAS Testing – As required by the MassDEP WRWS test for six PFAS compounds and remains in compliance with the Maximum Contaminant Level (MCL) of 20 ppt. The average result for 2020 was 3.25 ppt. In an effort to reduce the detected PFAS contaminants in our drinking water supplies, the WRWS is replacing the media in all four filters at the Water Treatment Plant in 2021.



How is your water treated?

All of the water from our wells and surface water supplies is treated at our water treatment facility in Hingham. The water receives both physical and chemical treatment including: the addition of lime for pH adjustment; the addition of potassium permanganate for oxidation; rapid mixing, flocculation, and coagulation using alum and polymer; clarification using an upflow clarifier; filtration using granular-activated carbon filter media; disinfection using chlorine; fluoridation using hydrofluorsilicic acid; and corrosion control using sodium carbonate and zinc orthophosphate. The water that we receive from Cohasset is treated similarly at Cohasset's water treatment facility and matches our own target water quality goals for pH, chlorine, and fluoride.

Cryptosporidium

The EPA requires public water systems that use surface water sources to monitor for Cryptosporidium. This is a microbial pathogen found in lakes and rivers throughout the U.S. that can cause gastrointestinal illness if consumed. Aquarion continues to monitor its surface water sources and did not detect Cryptosporidium in the reservoir that serves the Hingham/Hull System in our most recent testing.

Source Water Assessment Report:

The Massachusetts DEP's Source Water Assessment Program (SWAP), which evaluates each water source to identify potential contamination, states that the water sources that supply drinking water to the Hingham/Hull/North Cohasset System have a high susceptibility to potential contamination. The SWAP report is available at the state DEP website: mass.gov/dep/water/drinking/3131000.pdf.

WATER QUALITY IS OUR PRIORITY

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 that water poses a health risk. In order to ensure tap water is safe to drink, EPA and MassDEP prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (800-426-4791).

Lead in Drinking Water

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Your water is lead-free when it leaves our treatment plant. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Weir River Water System is 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 and 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 at 800.426.4791 or at <http://www.epa.gov/safewater/lead>. To learn more about lead, please visit: www.weirriverwater.com or <http://www.epa.gov/lead>.

Information for persons with compromised immune systems:

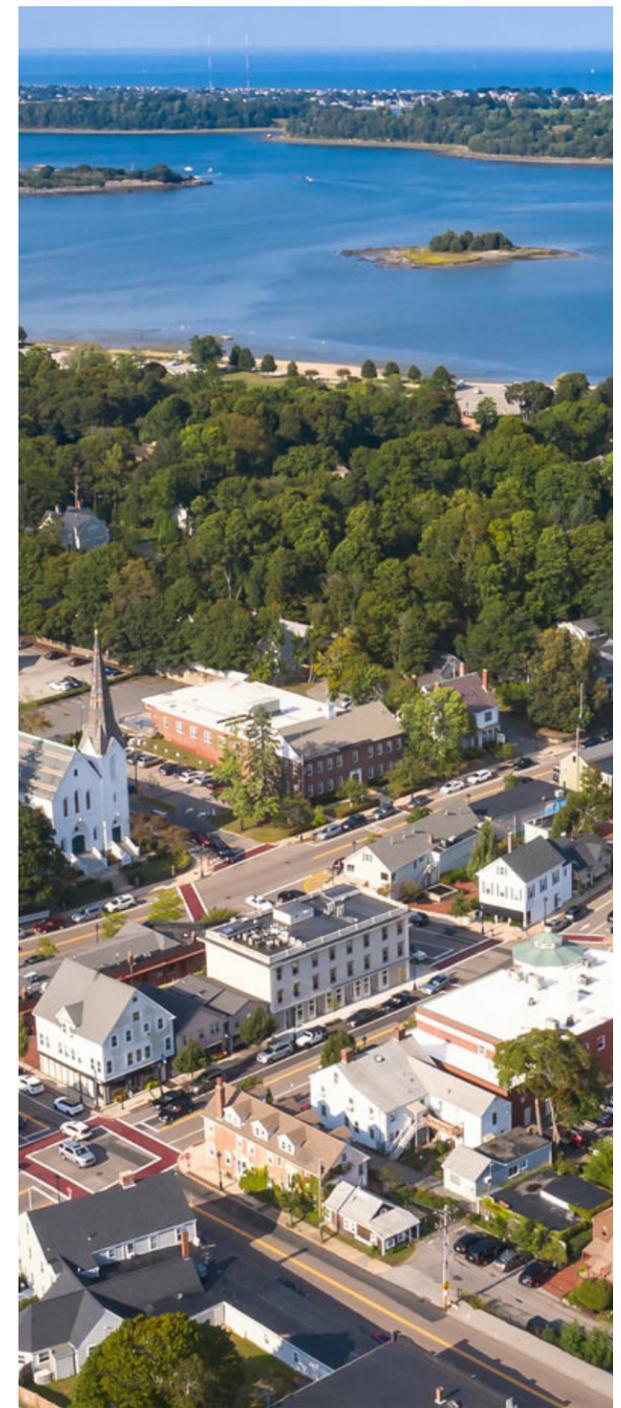
Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC 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.

Questions About Your Water Quality Report

Customers who have questions about water quality, should contact the WRWS/SUEZ toll-free, 24 hours per day at **877-253-6665**.

For other questions, or to report discolored water/service problems, or if you would like to participate in a public meeting you can also contact the same 24 hour number or visit the customer service center located at: 185 Lincoln Street, Unit 200B, Hingham, MA 02043.

Massachusetts Department of Environmental Protection:
www.mass.gov/info-details/public-drinking-water-system-operations
U.S. Environmental Protection Agency's Safe Drinking Water Hotline:
800-426-4791 or www.epa.gov/safewater



WEIR RIVER WATER SYSTEM WATER QUALITY TABLE

Your water has been tested for more than 100 compounds that are important to public health. Of those detected, all were below the amounts allowed by state and federal law. Most of these compounds are either naturally occurring or introduced as treatment to improve water quality. Monitoring frequency varies from daily to once every nine years per EPA regulation, depending on the parameter. Our testing encompasses the full range of regulated inorganic, organic and radiological compounds and microbiological and physical parameters. Results shown below are for detected compounds only.

Footnotes and Definitions for Table on Left:

< Less than
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 contamination.
NA: Not Applicable
ND: Not detected
NTU: Nephelometric Turbidity Units: a measure of the presence of particles. Low turbidity is an indicator of high-quality water.
ORSG: Office of Research and Standards Guideline –State of Massachusetts
ppb: parts per billion, or micrograms per liter (ug/L)
ppm: parts per million, or milligrams per liter (mg/L)
SMCL: Secondary Maximum Contaminant Level
TT: Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.

90th percentile value in copper monitoring. Result is representative of customer sampling stagnant water. No locations exceeded the action level for copper.

90th percentile value in lead monitoring. Result is representative of customer sampling stagnant water. One location exceeded the action level for lead.

Reported value is the highest locational, annual average of quarterly measurements for disinfection by-products in the distribution system. Values in the range are individual measurements.

DISTRIBUTION SYSTEM WATER QUALITY								
This report summarizes only those items detected during sampling - not all contaminants that are monitored								
Microbial Results	Highest % Positive in a Month	Range Detected	MCL	MCLG	Violation	Possible Source of Contamination		
Total Coliform Bacteria **	0.0%	0%	>5% Monthly Samples Positive	0	No	Naturally present in the environment		
Fecal Coliform or E. coli	0%	0%	*	0	No	Human and animal fecal waste		
*Compliance with the Fecal Coliform / E.coli MCL is determined upon additional repeat testing.								
**Total Coliform: Coliform are bacteria that are naturally present in the environment and are used as an indicator that other potentially harmful bacteria may be present.								
Lead & Copper	Dates Collected	90th Percentile	Action Level	MCLG	# of Sites samples	# of Sites Above Action Level	Violation	Possible Source of Contamination
Lead (ppm)	6/25/2019 through 8/8/2019	0.002	0.015	0	30	1	No	Corrosion of household plumbing systems: Erosion of natural deposits
Copper (ppm)	6/25/2019 through 8/8/2019	0.72	1.3	1.3	30	0	No	Corrosion of household plumbing systems: Erosion of natural deposits
TESTING FOR LEAD - 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. Weir River Water System is 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 http://www.epa.gov/safewater/lead .								
SUMMARY OF FINISHED WATER CHARACTERISTICS								
Regulated Contaminants	Date(s) Collected	Highest Detect Value	Range Detected	MCL	MCLG	Violation	Possible Source of Contamination	
Inorganic Contaminants:								
Barium (ppm)	9/24/2020	0.0268	N/A	2	2	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits	
Sodium** (ppm)	9/24/2020	86.2	N/A		20	No	Road salting; erosion of natural deposits	
Fluoride (ppm)	9/24/2020	0.502	N/A	4	4	No	Discharge from fertilizer and aluminum factories; erosion of natural deposits.	
Nitrate* (ppm)	9/24/2020	0.678	N/A	10	10	No	Runoff from fertilizer use: leaching from septic tanks; sewage; erosion of natural deposits	
Perchlorate*** (ppb)	9/30/2020	N/D	N/A	2	-	No	Rocket propellants, fireworks, munitions, flares, blasting agents *(see note below)*	
*Nitrate	Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask for advice from your health care provider.							
**Sodium	Sodium is a naturally-occurring common element found in soil and water. It is necessary for the normal functioning of regulating fluids in human systems. The guideline of 20mg/L for sodium represents a level in water that physicians and sodium sensitive individuals should be aware of in cases where sodium exposures are being carefully controlled. Sodium-sensitive individuals, such as those experiencing hypertension, kidney failure, or congestive heart failure, who drink water containing sodium, should be aware of levels where exposures are being carefully controlled. For additional information, contact your health care provider, your local board of health or the Massachusetts Department of Public Health, Bureau of Environmental Health Assessment at 617-624-5757.							
***Perchlorate (Various Chemical Abstract Service Registry Numbers (CASRN) for different chemical species)	Perchlorate interferes with the normal function of the thyroid gland and thus has the potential to affect growth and development, causing brain damage and other adverse effects, particularly in fetuses and infants. Pregnant women, the fetus, infants, children up to the age of 12, and people with a hypothyroid condition are particularly susceptible to perchlorate toxicity.							
Organic Contaminants:								
Bromodichloromethane (ppb)	Quarterly	5.15	1.45-5.15	NA	NA	No	By-product of drinking water chlorination	
Dibromochloromethane (ppb)	Quarterly	2.82	0.62-2.82	NA	NA	No	By-product of drinking water chlorination	
Chloroform (ppb)	Quarterly	8.07	4.03-8.07	ORSG 70	NA	No	By-product of drinking water chlorination	
Dibromoacetic (ppb)	Quarterly	1.51	N/A	NA	NA	No	By-product of drinking water chlorination	
Trichloroacetic (ppb)	Quarterly	5.26	2.53-5.26	NA	NA	No	By-product of drinking water chlorination	
Monobromoacetic (ppb)	Quarterly	3.25	N/A	NA	NA	No	By-product of drinking water chlorination	
Dichloroacetic (ppb)	Quarterly	5.62	3.59-5.62	NA	NA	No	By-product of drinking water chlorination	
Stage 2 Disinfectants and Disinfection Byproducts								
Chlorine (ppm)	4th Quarter	0.57**	ND-1.52*	4	4	No	Water additive used to control microbes	
TTHMs (Stage 2) [Total Trihalomethanes] (ppb)	Quarterly	67.7**	32-80.3*	80	-	No	By-product of drinking water chlorination	
HAA5s (Stage 2) Haloacetic Acids (HAA5) (ppb)	Quarterly	33.5**	2.4-29*	60	-	No	By-product of drinking water chlorination (TT)	
** Note highest detected value is highest Running Annual Average (RAA). ***Local Running Annual Average								
* Note: THM, HAA and Chlorine minimum and maximum levels in the ranges of results are site specific.								
Secondary Contaminants	Date(s) Collected	Highest Detect Value	Range Detected	SMCL	ORSG	Possible Source of Contamination		
Magnesium (ppm)	9/24/2020	6.33	NA	-	-	Natural Mineral and Organic Matter		
Chloride (ppm)	9/24/2020	95.2	NA	250	NA	Natural Mineral, Road Salt		
Calcium (ppm)	9/24/2020	26.8	NA	-	-	Natural Mineral and Organic Matter		
Copper (ppm)	9/24/2020	0.003	NA	1	-	Naturally occurring element; corrosion of household plumbing		
Manganese (ppm)*	9/24/2020	0.0184	NA	0.05	0.3	Erosion of Natural Deposits		
Potassium (ppm)	9/24/2020	2.85	NA	-	-	Natural Mineral and Organic Matter		
Sulfate (ppm)	9/24/2020	44.6	NA	250	250	Natural Sources		
Alkalinity (ppm)	9/24/2020	105	NA	-	-	Natural Sources		
Hardness (ppm)	9/24/2020	93	NA	-	-	Natural Sources		
Total Dissolved solids (ppm)	9/24/2020	337	NA	500	-	Runoff and leaching from natural deposits; seawater influence		
PH	9/24/2020	7.28	NA	6.5-8.5	-	Runoff and leaching from natural deposits; seawater influence		
Zinc (ppm)	9/24/2020	0.262	NA	5	NA	Erosion of Natural Deposits, and Industrial Discharge		
*EPA has established a lifetime health advisory (HA) for manganese at 0.3ppm and an acute at 1ppm								
Fourth Unregulated Contaminant Monitoring Rule (UCMR4)								
IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER - Availability of Monitoring Data for Unregulated Contaminants for Weir River Water System								
As required by US Environmental Protection Agency (EPA), our water system has sampled for a series of unregulated contaminants. Unregulated contaminants are those that don't yet have a drinking water standard set by EPA. The purpose of monitoring for these contaminants is to help EPA decide whether the contaminants should have a public health protection standard. As our customers, you right to know that these data are available. If you are interested in examining the results, please contact (877) 253-6665 or 185 Lincoln Street Unit 200B, Hingham MA 02043.								
This notice is being sent to you by the Weir River Water System. State Water System ID#: 4131000.								

CCR UNREGULATED CHART FOR PFAS DETECTS IN 2020							
Unregulated Contaminant	Date(s) Collected	Range Detected ppt	Average Detected ppt	MCL ppt	Possible Source of Contamination	Health Effects	
PFOS, PFOA, PFNA, PFHxS, PFHpA, PFDA	Quarterly	ND-5	3.25*	20	Man-made chemicals. Used as surfactants to make products stain or water resistant, in fire-fighting foam, for industrial purposes, and as a pesticide. Used in fluoropolymers (such as teflon) cosmetics, greases and lubricants, paints, adhesives and photographic films. PFOS U.S. manufacturing phased out in 2002; PFOS may still be generated incidentally or in imported products.	Long-term exposure to PFOS and PFOA in drinking water may affect the liver, cholesterol and thyroid hormone levels. Some studies indicate that exposure to elevated levels of PFOS and PFOA could cause immunological effects, developmental effects and some types of cancer in laboratory animals. Scientists are working to better understand the degree of risk to people. Based on studies of laboratory animals and chemical similarity to PFOS and PFOA depending on the level and length of exposure, PFNA, PFHxS, PFHpA and PFDA in drinking water may affect the liver, cholesterol levels, thyroid and immune system and may cause developmental effects.	
Perfluoro-Hexanoic (PFHxA)	Quarterly	18-Mar	8.5	**	Man-made chemical; used in products to make them stain, grease, heat and water resistant.	Based on studies of laboratory animals, people exposed to elevated levels of PFHxA for several years could experience effects on the liver. It is less toxic and is cleared from the body much faster than PFOS, PFOA and other longer-chain PFAS.	
Perfluorobutanesulfonic Acid (PFBS)	Quarterly	ND-2	2.0	**	Man-made chemical; used in products to make them stain, grease, heat and water resistant.	Based on studies of laboratory animals, people exposed to elevated levels of PFBS for several years could experience effects on the liver, thyroid, blood and kidneys. It is less toxic and is cleared from the body much faster than PFOS, PFOA and other longer-chain PFAS.	

On October 2, 2020, the Massachusetts Department of Environmental Protection (MassDEP) published final regulations establishing a drinking water standard, or a Maximum Contaminant Level (MCL), for the sum of six per- and polyfluoroalkyl substances (PFAS). The MCL is 20 parts per trillion (ppt) for what the regulations call PFAS6, or the sum of six PFAS compounds: perfluorooctanesulfonic acid (PFOS), perfluorooctanoic acid (PFOA), perfluorohexane sulfonic acid (PFHxS), perfluorononanoic acid (PFNA), perfluoroheptanoic acid (PFHpA), and perfluorodecanoic acid (PFDA). PFAS are a family of chemicals widely used since the 1950s to manufacture common consumer products. They have been linked to a variety of health risks, particularly in women who are pregnant or nursing, and in infants. In using the sum of six PFAS compounds, the new standard protects public health for sensitive subgroups including pregnant women, nursing mothers and infants. Please consult your health practitioner if you have any health related questions. For a consumer factsheet on PFAS see: <https://www.mass.gov/doc/massdep-fact-sheet-pfas-in-drinking-water-questions-and-answers-for-consumers/download>

* Running Annual Average** There is no ORS Guideline or UCMR3 reference concentration health benchmark for this compound. However, the Minnesota Department of Health established a drinking water guidance value of 2,000 ppt for PFBS. See: <http://www.health.state.mn.us/divs/eh/risk/guidance/gw/pfbsinfo.pdf>. EPA also has draft toxicity assessments for PFBS at: <https://www.epa.gov/pfas/genx-and-draft-toxicity-assessments>