MASSACHUSETTS WATER RESOURCES AUTHORITY
100 First Avenue, Charlestown Navy Yard, Boston, MA 02129

WATER QUALITY UPDATE

An Analysis of April 2022 Sampling Data

For more information, please contact MWRA at (617) 242-5323, or visit www.mwra.com.

April 2022 Highlights

•**In April, MWRA met all regulatory targets for pathogen inactivation at Brutsch Water Treatment Facility and Carroll Water Treatment Plant**, achieving greater than the required 99% *Cryptosporidium* inactivation and 99.9% *Giardia* inactivation at all times. See pages 5 and 6.

•**MWRA met all regulatory targets for the month**. No community triggered the requirement for an Assessment under the Revised Total Coliform Rule. See Page 7.

•**To reduce paper usage, printing, and postage costs, and to provide the most detailed information on water quality, MWRA changed to an electronic version of this report in 2015.**

We are continually updating the report. Let us know what you think.

Call *(617) 788-4822 or email Beverly.Anderson@mwra.com*

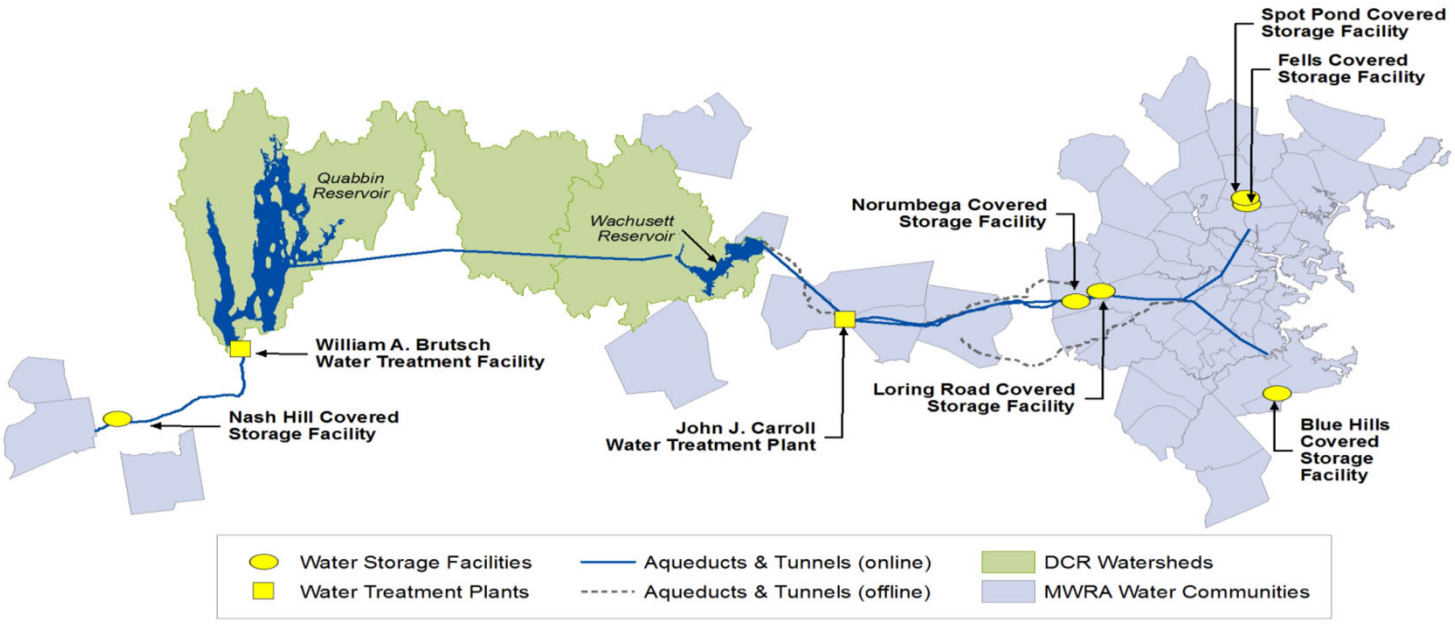
Release Date: May 20, 2022

Water Quality Update
This is a monthly report about the quality of water supplied by MWRA. It provides a more detailed review than the annual water quality report that is mailed each June. The reports are available at www.mwra.com. Data within this report are subject to verification and correction.

The Water System
The MWRA supplies wholesale water to local water departments in 53 communities, 47 in greater Boston and MetroWest, three in Western Massachusetts, and as a back-up supply for three others. Each municipality is responsible for distributing the water within its own community. More than two million people are served by the MWRA water supply system, and about 200 million gallons are supplied each day. Quabbin Reservoir is the primary source of water for the whole MWRA system, and one of the country's largest reservoirs, with a capacity of 412 billion gallons. Within this report, Quabbin water represents source water for the three communities in the Chicopee Valley Aqueduct (CVA) system (Chicopee, Wilbraham and South Hadley FD1).

Water is then transferred from Quabbin Reservoir to the 65 billion gallon Wachusett Reservoir in Clinton via the Quabbin Aqueduct. Within this report, Wachusett water represents source water for MetroWest and Metropolitan Boston communities. The 401-square mile watershed areas of the Quabbin and Wachusett Reservoirs are naturally protected with over 85% of the watersheds covered in forest and wetlands. To ensure the safety of the water, the Department of Conservation and Recreation (DCR) patrols the watersheds, and with cooperation from MWRA, tests the streams and reservoirs frequently.

The map below indicates the location of reservoirs, treatment facilities, and service communities.



Water Treatment
The water MWRA supplies from the Wachusett Reservoir is treated at the state-of-the-art John J. Carroll Treatment Plant. The water is treated with ozone, sodium bisulfite for ozone quench, ultra-violet light (UV), sodium carbonate and carbon dioxide for corrosion control, fluoride, and chloramines. Water supplied from the Quabbin Reservoir is treated at the William A. Brutsch Water Treatment Facility with UV and chlorine. Each of the three CVA communities provides corrosion control.

Indicators of Water Quality
MWRA tests the water extensively for over 120 different contaminants and parameters across the system; this includes several hundred thousand tests each year. EPA and MA DEP set the standards for source and treated water quality, and include standards for total and fecal coliform, turbidity, disinfection and disinfection by-products, pathogens, metals, and other potential chemical contaminants. A full list is available at www.mwra.com. Tests are conducted on water sampled at the source reservoirs (source or “raw water”) and also on water after treatment (“treated water”). MWRA also routinely monitors for a variety of parameters that tell us about disinfection, corrosivity, and the organic and inorganic constituents in the water. Testing frequencies vary by parameter.

Customer communities must also meet certain standards under the EPA regulations concerning distribution of treated drinking water. The Total Coliform Rule (TCR) helps to alert communities to possible microbial contamination as well as the adequacy of residual disinfection within the local distribution system. MWRA tests over 2,000 community samples per month.

Source Water – Microbial and UV-254 Results
April 2022

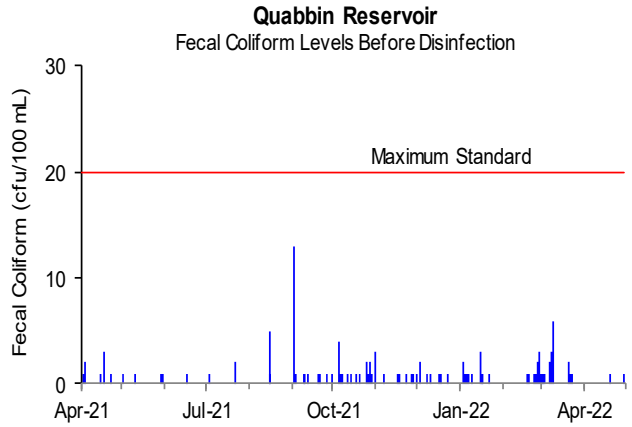
Source Water - Microbial Results

Total coliform bacteria are monitored in both source and treated water to provide an indication of overall bacteriological activity. Most coliforms are harmless. However, fecal coliform, a subclass of the coliform group, are identified by their growth at temperatures comparable to those in the intestinal tract of mammals. They act as indicators of possible fecal contamination. The Surface Water Treatment Rule for unfiltered water supplies allows for no more than 10% of source water samples prior to disinfection over any six-month period to have more than 20 fecal coliforms per 100mL.

Sample Site: Quabbin Reservoir

Quabbin Reservoir water is sampled at the Brutsch Water Treatment Facility raw water tap before being treated and entering the CVA system.

Two of the 30 samples were positive during April. None of the samples exceeded a count of 20 cfu/100mL. **For the current six-month period, 0.0% of the samples have exceeded a count of 20 cfu/100mL.**

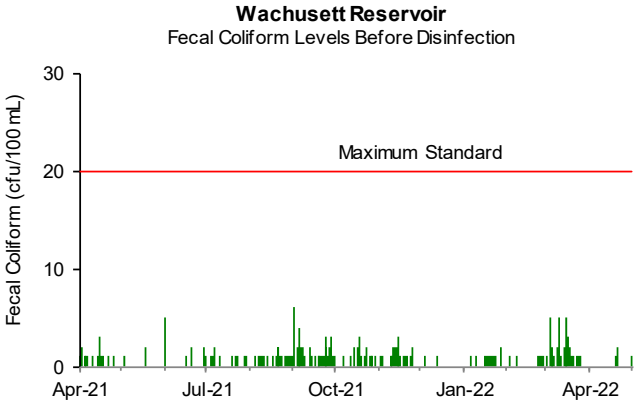


Sample Site: Wachusett Reservoir

Wachusett Reservoir water is sampled at the Carroll Water Treatment Plant raw water tap in Marlborough before being treated and entering the MetroWest/Metropolitan Boston systems.

In the wintertime when smaller water bodies near Wachusett Reservoir freeze up, many waterfowl will roost in the main body of the reservoir - which freezes later. This increased bird activity tends to increase fecal coliform counts. DCR has an active bird harassment program to move the birds away from the intake area.

Three of the 30 samples were positive during April. None of the samples exceeded a count of 20 cfu/100mL. **For the current six-month period, 0.0% of the samples have exceeded a count of 20 cfu/100mL.**

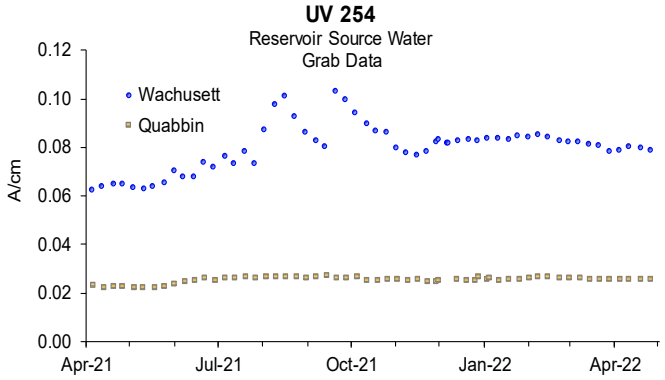


Source Water - UV Absorbance

UV Absorbance at 254nm wavelength (UV-254), is a measure of the amount and reactivity of natural organic material in source water. Higher UV-254 levels cause increased ozone and chlorine demand resulting in the need for higher ozone and chlorine doses, and can increase the level of disinfection by-products. UV-254 is impacted by tributary flows, water age, sunlight and other factors.

Quabbin Reservoir UV-254 levels averaged 0.025 A/cm for the month.

Wachusett Reservoir UV-254 levels averaged 0.079 A/cm for the month.



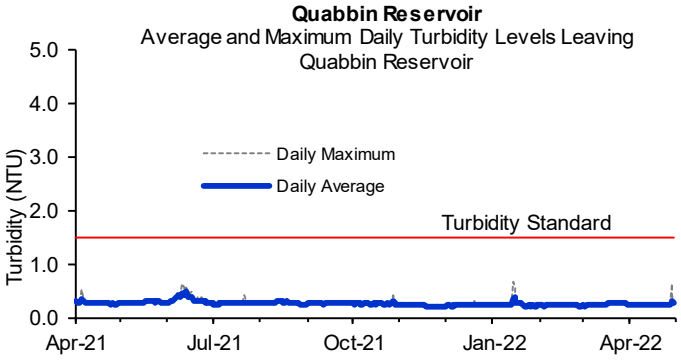
Source Water – Turbidity and Algae Results
April 2022

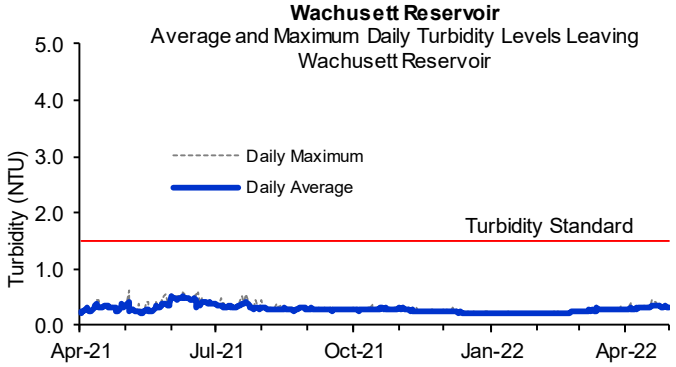
Source Water - Turbidity Results

Turbidity is a measure of suspended and colloidal particles including clay, silt, organic and inorganic matter, algae and microorganisms. The effects of turbidity depend on the nature of the matter that causes the turbidity. High levels of particulate matter may have a higher disinfectant demand or may protect bacteria from disinfection effects, thereby interfering with the disinfectant residual throughout the distribution system.

There are two standards for turbidity: all water must be below five NTU (Nephelometric Turbidity Units), and water can only be above one NTU if it does not interfere with effective disinfection.

Turbidity of Quabbin Reservoir water is monitored continuously at the Brutsch Water Treatment Facility (BWTF) before UV and chlorine disinfection. Turbidity of Wachusett Reservoir is monitored continuously at the Carroll Water Treatment Plant (CWTP) before ozonation and UV disinfection. Maximum turbidity results at Quabbin and Wachusett were within DEP standards for the month.



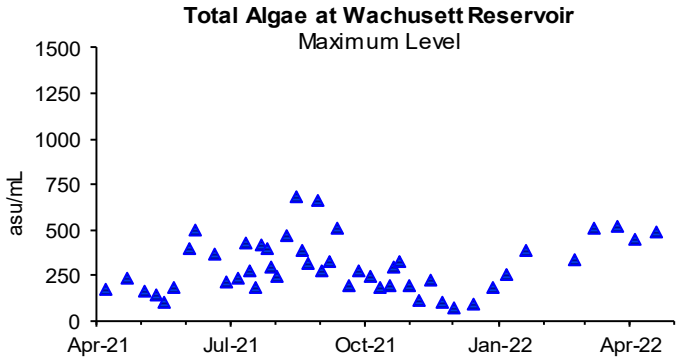


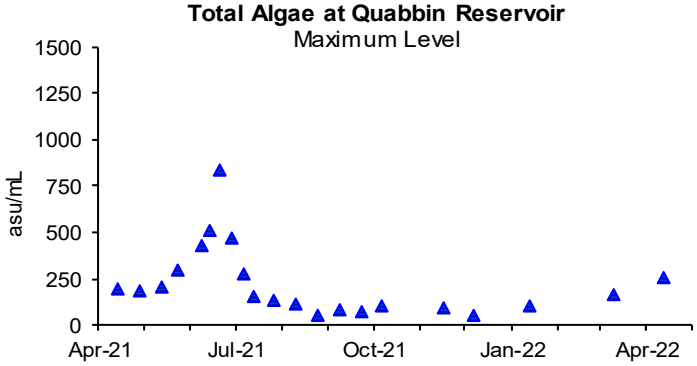
Source Water - Algae Levels

Algae levels in the Wachusett and Quabbin Reservoir are monitored by DCR and MWRA. These results, along with taste and odor complaints, are used to make decisions on source water treatment for algae control.

Taste and odor complaints at the tap may be due to algae, which originate in source reservoirs, typically in trace amounts. Occasionally, a particular species grows rapidly, increasing its concentration in water. When *Synura*, *Dolichospermum* (formerly called Anabaena), or other nuisance algae bloom, MWRA may treat the reservoirs with copper sulfate, an algaecide. During the winter and spring, diatom numbers may increase. While diatoms are not a taste and odor concern, consumers using filters may notice more frequent changing of the filters is needed.

No complaints which may be related to algae were reported during April from local water departments.





Treated Water – Disinfection Results
April 2022

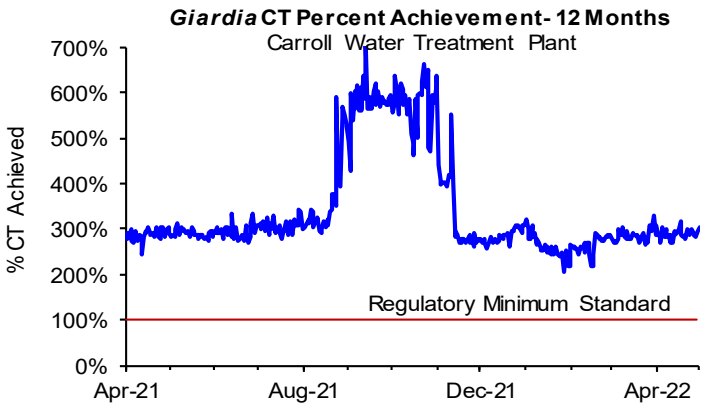
Treated Water - Primary Disinfection

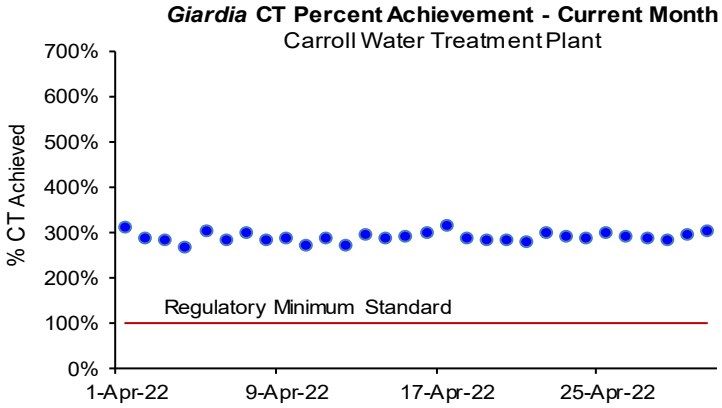
At the Carroll Water Treatment Plant (CWTP), MWRA meets the required 99.9% (3-log) inactivation of *Giardia* using ozone (reported as CT: concentration of disinfectant x contact time) and the required 99% (2-log) inactivation of *Cryptosporidium* using UV (reported as IT: intensity of UV x time). MWRA calculates inactivation rates hourly and reports *Giardia* inactivation at maximum flow and *Cryptosporidium* inactivation at minimum UV dose. MWRA must meet at least 100% of required CT and IT.

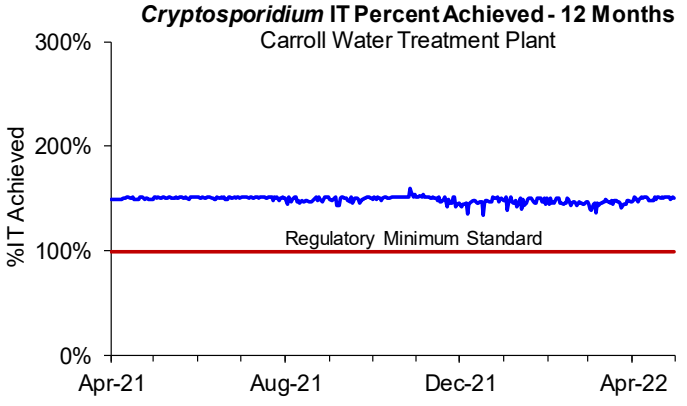
CT achievement for *Giardia* assures CT achievement for viruses, which have a lower CT requirement. For *Cryptosporidium*, there is also an "off-spec" requirement. Off-spec water is water that has not reached the full required UV dose or if the UV reactor is operated outside its validated ranges. No more than 5% off-spec water is allowed in a month.

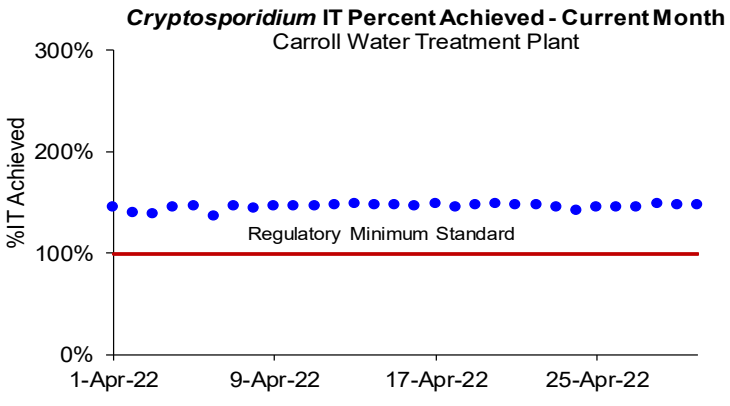
Wachusett Reservoir - MetroWest/MetroBoston Supply

- Ozone dose at the CWTP varied between 2.4 to 2.7 mg/L for April.
- *Giardia* CT was maintained above 100% at all times the plant was providing water into the distribution system for April.
- *Cryptosporidium* IT was maintained above 100% during the month. Off-spec water was less than 5%.
- The ozone target was increased mid-August 2021 through early November to reduce chlorine demand and decay, as during this time chlorine residuals declined in the distribution system.





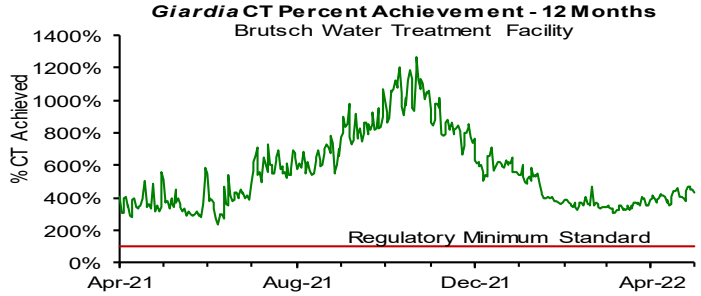


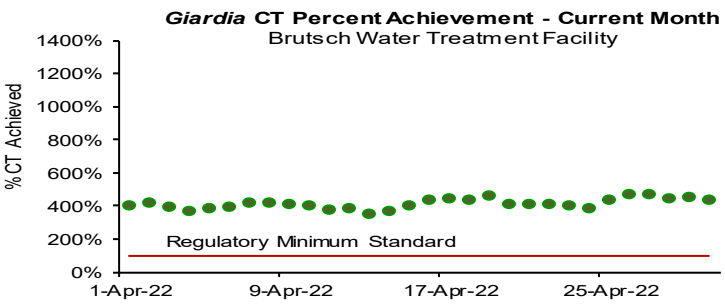


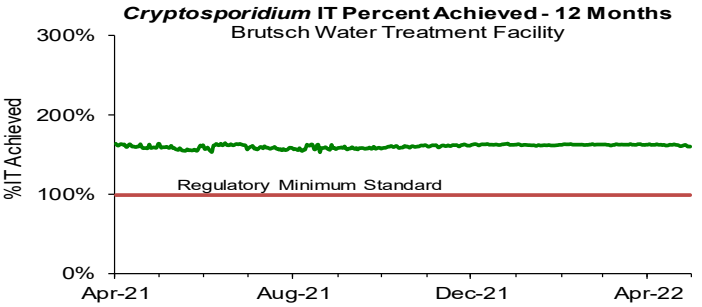
Treated Water – Disinfection, pH and Alkalinity Results
April 2022

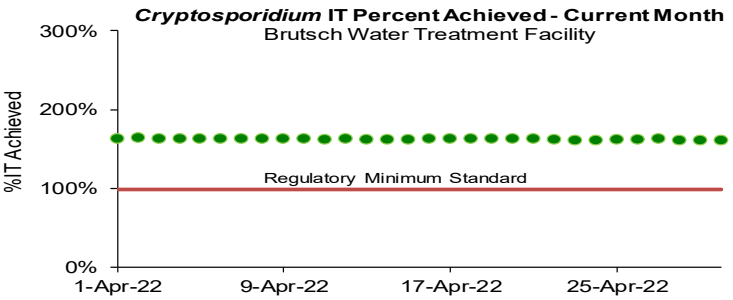
Quabbin Reservoir at Brutsch Water Treatment Facility (BWTF) (CVA Supply)

- The chlorine dose at BWTF is adjusted in order to achieve MWRA's seasonal target of 0.75 - 0.85 mg/L (November 1 – May 31) and 0.85 - 1.05 mg/L (June 1 – October 31) at Ludlow Monitoring Station.
- The chlorine dose at BWTF varied between 1.30 and 1.40 mg/L for April.
- *Giardia* CT was maintained above 100% at all times the plant was providing water into the distribution system for April.
- *Cryptosporidium* IT was maintained above 100% during the month. Off-spec water was less than 5%.







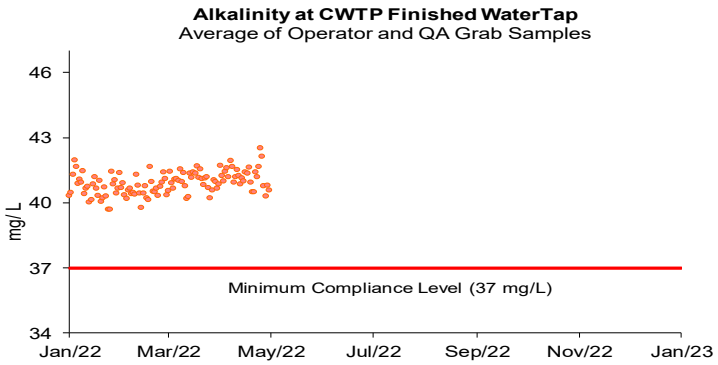


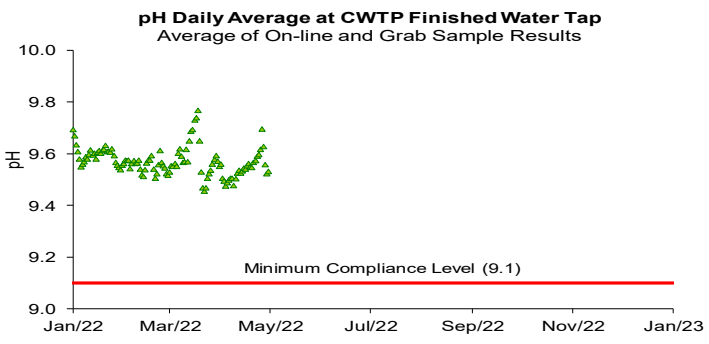
Treated Water - pH and Alkalinity Compliance

MWRA adjusts the alkalinity and pH of Wachusett water at CWTP to reduce its corrosivity, which minimizes the leaching of lead and copper from service lines and home plumbing systems into the water. MWRA's target for distribution system pH is 9.3; the target for alkalinity is 40 mg/L. Per DEP requirements, samples from the CWTP finished water have a minimum compliance level of 9.1 for pH and 37 mg/L for alkalinity. Samples from 27 distribution system locations have a minimum compliance level of 9.0 for pH and 37 mg/L for alkalinity. Results must not be below this level for more than 9 days in a six-month period. MWRA tests finished water pH and alkalinity daily at the CWTP Fin B sampling tap. When CWTP undergoes winter maintenance, samples are collected at the CWTP Fin A sampling tap. Distribution system samples are collected in March, June, September, and December.

Each CVA community provides its own corrosion control treatment. See the CVA annual report: https://www.mwra.com/annual/waterreport/2020results/cva.pdf.

In April and over the past six months, no sample results were below the compliance levels.





Bacteria & Chlorine Residual Results for Communities in MWRA Testing Program
April 2022

While all communities collect bacteria samples and chlorine residual data for the Total Coliform Rule (TCR), data from the 44 systems that use MWRA's Laboratory are reported below. The MWRA TCR program has 144 sampling locations. These locations include sites along MWRA's transmission system, water storage tanks and pumping stations, as well as a subset of the community TCR locations. Samples are tested for total coliform and *Escherichia coli (E.coli*). *E.coli* is a specific coliform species whose presence likely indicates potential contamination of fecal origin. If *E.coli* are detected in a drinking water sample, this is considered evidence of a potential public health concern. Public notification is required if repeat tests confirm the presence of *E.coli* or total coliform. Total coliform provide a general indication of the sanitary condition of a water supply. If total coliform are detected in more than 5% of samples in a month (or if more than one sample is positive when less than 40 samples are collected), the water system is required to investigate the possible cause with a Level 1 or 2 Assessment, and correct any identified problems. A disinfectant residual is intended to maintain the sanitary integrity of the water; MWRA considers a residual of 0.2 mg/L a minimum target level at all points in the distribution system.

Highlights

None of the 2,118 samples (0.0%) system-wide tested positive for total coliform during the month of April. None of the 609 Community/MWRA shared samples tested positive for total coliform during the month of April. No samples tested positive for *E.coli*. None of the Fully Served community samples had chlorine residuals lower than 0.2 mg/L.

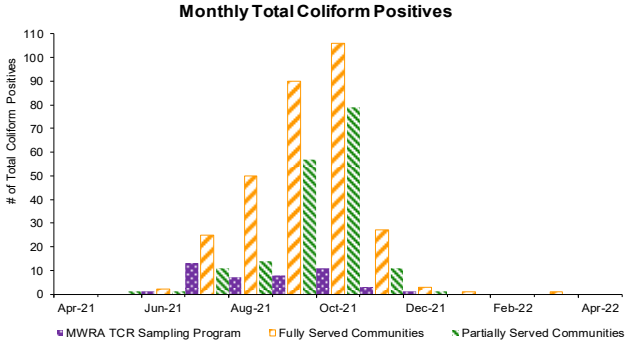
NOTES:

a) MWRA total coliform and chlorine residual results include data from community locations. In most cases these community results are indicative of MWRA water as it enters the community system; however, some are strongly influenced by local pipe conditions. Residuals in the MWRA system are typically between 1.0 and 2.8 mg/L.

b) The number of samples collected depends on the population served and the number of repeat samples required.

c) These communities are partially supplied, and may mix their chlorinated supply with MWRA chloraminated supply.

d) Chicopee Valley Aqueduct System. Free chlorine system.



			Total Coliform # Samples (b)	Total Coliform # (%) Positive	*E.coli* # Positive	Assessment Required
MWRA	a	MWRA Locations	128	0 (0%)	0	
		Shared Community/MWRA sites	481	0 (0%)	0	
		Total: MWRA	609	0 (0%)	0	
Fully Served		ARLINGTON	52	0 (0%)	0	
		BELMONT	32	0 (0%)	0	
		BOSTON	240	0 (0%)	0	
		BROOKLINE	69	0 (0%)	0	
		CHELSEA	52	0 (0%)	0	
		DEER ISLAND	16	0 (0%)	0	
		EVERETT	52	0 (0%)	0	
		FRAMINGHAM	79	0 (0%)	0	
		LEXINGTON	35	0 (0%)	0	
		LYNNFIELD	6	0 (0%)	0	
		MALDEN	72	0 (0%)	0	
		MARBLEHEAD	24	0 (0%)	0	
		MARLBOROUGH	42	0 (0%)	0	
		MEDFORD	64	0 (0%)	0	
		MELROSE	36	0 (0%)	0	
		MILTON	34	0 (0%)	0	
		NAHANT	10	0 (0%)	0	
		NEWTON	92	0 (0%)	0	
		NORTHBOROUGH	16	0 (0%)	0	
		NORWOOD	33	0 (0%)	0	
		QUINCY	112	0 (0%)	0	
		READING	40	0 (0%)	0	
		REVERE	60	1 (1.28%)	0	No
		SAUGUS	32	0 (0%)	0	
		SOMERVILLE	84	0 (0%)	0	
		SOUTHBOROUGH	10	0 (0%)	0	
		STONEHAM	28	0 (0%)	0	
		SWAMPSCOTT	17	0 (0%)	0	
		WALTHAM	72	0 (0%)	0	
		WATERTOWN	40	0 (0%)	0	
		WESTON	15	0 (0%)	0	
		WINTHROP	22	0 (0%)	0	
		Total: Fully Served	*1588*	*0 (0.0%)*		
Partially Served	c	BEDFORD	19	0 (0%)	0	
		BURLINGTON	43	0 (0%)	0	
		CANTON	30	0 (0%)	0	
		NEEDHAM	41	0 (0%)	0	
		PEABODY	63	0 (0%)	0	
		WAKEFIELD	44	0 (0%)	0	
		WELLESLEY	38	0 (0%)	0	
		WILMINGTON	29	0 (0%)	0	
		WINCHESTER	28	0 (0%)	0	
		WOBURN	64	0 (0%)	0	
		Total: Partially Served	*399*	*0 (0.0%)*		
CVA	d	MWRA CVA Locations	34	0 (0%)	0	
		CHICOPEE	62	0 (0%)	0	
		SOUTH HADLEY FD1	20	0 (0%)	0	
		WILBRAHAM	15	0 (0%)	0	
		Total: CVA	*131*	*0 (0%)*		
		Total: Community Samples	*2118*	*0 (0.0%)*		

Chlorine Residuals in Fully Served Communities

	2021									2022			
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
% <0.1	0.0	0.0	0.1	0.3	0.3	0.7	0.9	0.5	0.4	0.1	0.1	0.0	0.0
% <0.2	0.0	0.0	0.2	0.7	1.3	2.8	3.1	1.7	0.8	0.1	0.2	0.0	0.0
% <0.5	0.3	0.2	0.6	2.6	6.0	12.3	10.9	7.4	2.8	1.1	1.1	0.5	0.6
% <1.0	2.0	1.0	2.1	8.6	17.3	27.9	26.2	15.7	7.3	3.7	4.1	2.3	2.3
% ≥1.0	98.0	99.0	97.9	91.4	82.7	72.1	73.8	84.4	92.7	96.3	95.9	97.7	97.7

Treated Water - Disinfection By-Product (DBP) Levels in Communities
April 2022

Total Trihalomethanes (TTHMs) and Haloacetic Acids (HAA5s) are by-products of disinfection treatment with chlorine. TTHMs and HAA5s are of concern due to their potential adverse health effects at high levels. EPA's locational running annual average (LRAA) standard is 80 µg/L for TTHMs and 60 µg/L for HAA5s.

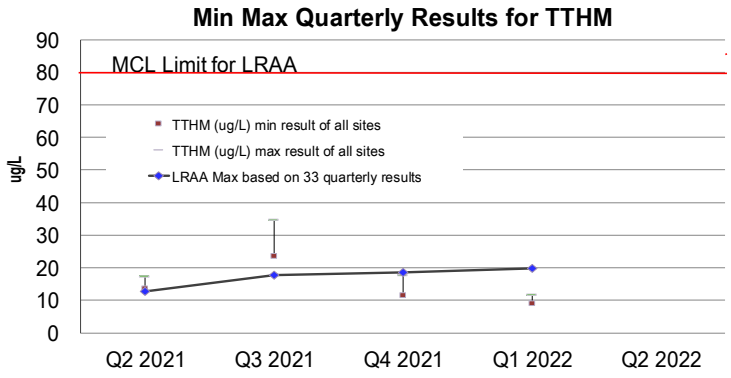
The locational running annual average at each individual sampling location must be below the standard. The charts below show the highest and lowest single values for all sites, and the LRAA of the highest location each quarter.

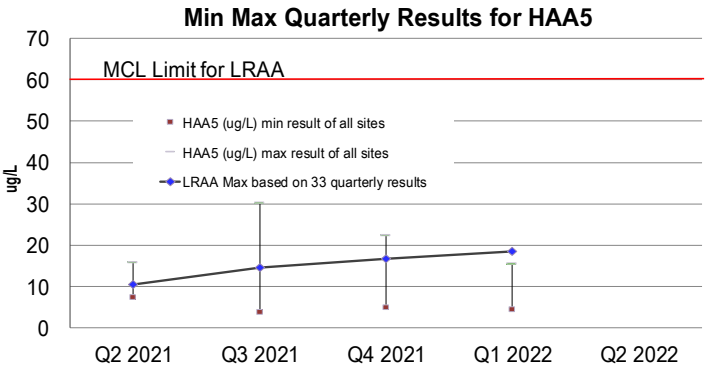
Partially served and CVA communities are responsible for their own compliance monitoring and reporting, and must be contacted directly for their individual results. The chart below combines data for all three CVA communities data (Chicopee, Wilbraham and South Hadley FD1). Each community is regulated individually.

Bromate is tested monthly as required for water systems that treat with ozone. Bromide in the raw water may be converted into bromate following ozonation. EPA's RAA Maximum Contaminant Level (MCL) standard for bromate is 10 µg/L.

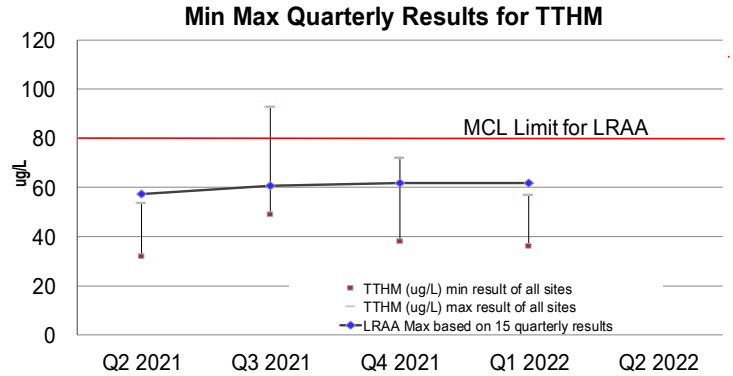
The LRAA for TTHMs and HAA5s for MWRA's Compliance Program (represented as the line in the top two graphs below) remains below current standards. The Max LRAA in the quarter for TTHMs = 19.8 µg/L; HAA5s = 18.6 µg/L. The current RAA for Bromate = 0.0 µg/L. No LRAA exceedances or violations occurred this quarter for MetroBoston and for any of the CVA communities. MWRA and the CVA communities continue to closely monitor and manage the disinfection process to minimize DBP production.

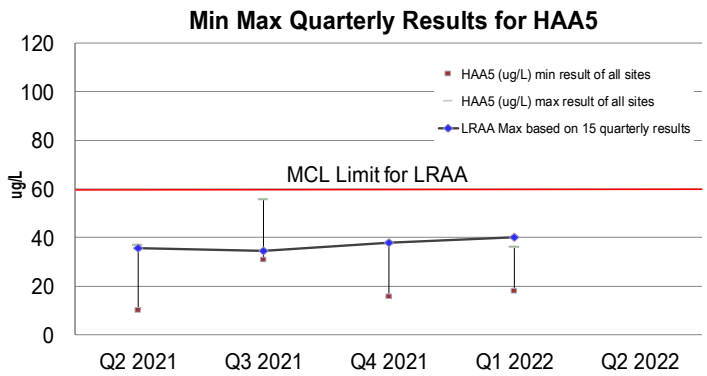
MetroBoston Disinfection By-Products





CVA Disinfection By-Products (Combined Results)





MWRA Monthly Water Quality Analysis
April 2022

This page provides information on water quality at four locations in the MWRA transmission system. Results reflect a "snapshot" in time and may not represent typical conditions. Monitoring for parameters indicated in regular font is quarterly as they either have minimal variability or are always below detection limits. The "Wachusett System" locations represent raw water from the Wachusett Reservoir (CWTP inlet) and finished water leaving the treatment plant (CWTP Finished water tap). The "CVA System" locations represent raw water from the Quabbin Reservoir (Brutsch Water Treatment Facility) and finished water after all treatment (Ludlow Monitoring Station). See www.mwra.com for additional information on other parameters which are monitored less frequently. All samples are analyzed by MWRA and contract laboratories.

	CVA System		Wachusett System Metro-Boston		Standards →			
Component	Brutsch Water Treatment Facility (Raw)	Ludlow Monitoring Station (Treated)	Carroll Water Treatment Plant Inlet (Raw)	Carroll Water TP Fin. Water Tap (Treated)	Health Standard	Aesthetics or Other Standards	Units	Method Reporting Limit
Alkalinity [3]	3.5	4.4	7.1	41.2			MG/L	0.05
Aluminum	U	U	U	19.1		50-200 (c)	UG/L	15.0
Ammonia-N, Total	0.031	0.019	0.035	0.527			MG/L	0.005
Antimony	U	U	U	U	6 (b)		UG/L	0.4
Arsenic	U	U	U	U	10 (b)		UG/L	1.0
Barium	5.29	5.5	8.39	8.75	2000 (b)		UG/L	2.0
Beryllium	U	U	U	U	4 (b)		UG/L	0.3
Bromate	U	U	U	U	10 (b)		UG/L	5.0
Bromide	10.0	5.9	16	13.1			UG/L	5.0
Cadmium [1]	U	U	U	U	5 (b)		UG/L	0.5
Calcium	1960	2010	4900	4900			UG/L	50
Chloride	8.0	24.6	29.9	102.0		250 (c)	MG/L	0.5
Chlorine, Free		0.70			4 (b)(d)		MG/L	0.02
Chlorine, Total				2.5	4 (b)(d)		MG/L	0.02
Chromium, Total	U	U	U	U	100 (b)		UG/L	1.0
Coliform, Fecal, MF Method	U		U		20 (a)		CFU/100 mL	1
Coliform, Total, Colilert Method [4]	3	U	4	U	100 (a) 0 (b)		MPN/100 mL	1
Color	6	6	17	7		15 (c)	CU	
Copper **	U	4.1	U	U		1300 (e) 1000 (f)	UG/L	3.0
Fluoride	U	U	U	0.63	4 (b)(h)		MG/L	0.02
Hardness [2]	7.1	7.2	16.3	16.3			MG/L	0.194
Iron **	9.5	10.4	42.1	50.7		300 (c)	UG/L	6.0
Lead **	U	U	U	U		15 (e)	UG/L	0.05
Magnesium	530	529	986	987			UG/L	35
Manganese	2.77	2.80	6.47	9.21		50 (c) 300 (g)	UG/L	0.1
Mercury [1]	U	U	U	U	2 (b)		UG/L	0.05
Nickel	U	U	U	U			UG/L	0.5
Nitrate-N	0.012	0.013	0.098	0.099	10 (b)		MG/L	0.005
Nitrite	U	U	U	0.006	1 (b)		MG/L	0.005
Orthophosphate	0.0045	0.0032	0.0059	0.0090			MG/L	0.0025
pH [3]	6.85	7.17	7.2	9.65			S.U.	
Potassium	506	532	1040	1030			UG/L	200
Selenium	U	U	U	U	50 (b)		UG/L	1.0
Silica (SiO2)	2190	2180	3990	4300			UG/L	200.0
Silver	U	U	U	U		100 (c)	UG/L	1.0
Sodium	5.54	6.47	19.1	37			MG/L	0.2
Specific Conductance	52.2	53.6	158	210			UMHO/cm	0.3
Standard Plate Count, HPC	3	U	12	U	500 (b)		CFU/mL	1
Sulfate (SO4)	3.78	5.34	5.60	8.49		250 (c)	MG/L	1.0
Thallium	U	U	U	U	2 (b)		UG/L	0.3
Total Dissolved Solids	35	42	83	118		500 (c)	MG/L	13
Total Organic Carbon	2.14	2.15	2.95	2.97			MG/L	0.3
Total Phosphorus	U	U	0.007	0.008			MG/L	0.005
UV-254	0.027	0.021	0.079	0.049			A/cm	0.000965
Zinc **	U	2.85	U	U		5000 (c)	UG/L	1.5

(a) = Primary MCL standard (health related), applies to source (raw) water only. DEP "Drinking Water Regulations", 310 CMR 22.00. The Primary MCL for Fecal coliform when both fecal and total coliform are tested.

(b) = Primary MCL standard (health related). DEP "Drinking Water Regulations", 310CMR 22.00. Applies to samples of treated water downstream of Wachusett and Quabbin Reservoirs. Most based on annual average.

(c) = Secondary MCL standard (aesthetic related). DEP "Drinking Water Regulations", 310 CMR 22.00.

(d) = Maximum Residual Disinfectant Level. DEP "Drinking Water Regulations", 310 CMR 22.00. Based on annual average.

(e) = Refers to 90th percentile Action Level. Lead results will vary at your home dependent on household plumbing.

(f) = Refers to a single sample, secondary MCL.

(g) = DEP Advisory Level, reference *www.mass.gov/eea/docs/dep/water/drinking/alpha/i-thru-z/mangfactsheet.pdf*

(h) = Fluoride level recommended by CDC for dental health is 0.7 mg/L

U = Less than method reporting limit
MCL = Maximum Contaminant Level
= Not Applicable
S.U. = Standard Units
CFU = Colony Forming Unit

CU = Color Unit
NTU = Nephelometric Turbidity Unit
MG/L = milligrams per liter = parts per million
UG/L = micrograms per liter = parts per billion

MPN = Most Probable Number
HPC = Heterotrophic Plate Count (48 Hrs @ 35 °C)
** = Metal results may be elevated due to local plumbing at the sample tap.
Quarterly results from April samples shown

*Results reported are from single grab samples collected April 5 and 6, 2022

NOTES:

(1) Due to MWRA lab equipment having higher sensitivity, MWRA's tests for several parameters are more sensitive than the EPA-set levels of detection and reporting. For example, the EPA minimum detection limit for cadmium is 1 ug/L and 0.2 ug/L for mercury, and MWRA lab tests and reports at lower than these detection limits.

(2) MWRA water is considered soft. Water hardness is characterized by the amount of dissolved minerals in the water, in particular calcium and magnesium. MWRA water has a hardness of about 15-20 mg/l or about 1 grain/gallon (1 grain/gallon = 17.1 mg/L). For comparison, hard water would have greater than 75 mg/l hardness.

(3) MWRA adjusts the alkalinity and pH. See page 6 for further details.