

2007 DRINKING WATER QUALITY REPORT

CONSUMER CONFIDENCE REPORT

WATER SOURCE

Currently, the Brockton system obtains its drinking water from Silver Lake and the Brockton Reservoir. Silver Lake is the primary supply (93.50% of total) and is located approximately 15 miles southeast of the center of Brockton. Over 50% of the watersheds are either owned by the City of Brockton or in conservation protection. The remainder of the acreage is largely low-density residential development. Water from the lake is treated at the Silver Lake Water Treatment Plant (SL WTP) and is transmitted through two 24-inch diameter mains to Brown's Crossing Pumping station. After Brown's Crossing, the water is pumped through one 36-inch diameter and two 24-inch diameter transmission mains to the Brockton service system. The Brockton Reservoir is a supplemental supply (6.50 % of total) to Silver Lake and is blended into the system at Woodland Avenue. This reservoir was placed in service when the Woodland Avenue WTP became operational in 1994. The Brockton service area and water sources are shown on the map on the front cover.

Furnace Pond in Pembroke and Monponsett Pond in Halifax are diverted by gravity to Silver Lake. These sources are subject to certain seasonal operating restrictions. The safe yield of the Silver Lake system is 9.4 million gallons per day (mgd). The safe yield of the Brockton Reservoir is 0.81 mgd.

Emergency sources include the Hubbard Avenue well, located in the southern part of Brockton and Pine Brook, which can be temporarily diverted to feed Silver Lake. The Hubbard Avenue well has not been active since 1985 due to fear of drawing nearby contaminated groundwater toward the well. The Pine Brook diversion has only been used once in 1986. It requires DEP authorization under a Declaration of Water Emergency.

Over the last twelve years the City has replaced 14.18 miles of undersized mains and 12.53 miles of large 100 year old mains for a total of 26.71 miles of pipe, which has reduced water lost in the system while adding 163 new fire hydrants to these streets. The City has a regular leak detection program that regularly inspects the 303 miles of water mains in Brockton, which also reduces water waste in 2007 we inspected 177.66 miles. This has maintained the systems annual water consumption at 9.731 million gallons per day in 2007. Water consumption has been kept down during a period of growth where the Commission has issued 1,041 water connections including 164 Commercial and Industrial establishments.

SOURCE WATER ASSESSMENT PROGRAM

The Brockton water system was evaluated in April 2003 by the Department of Environmental Protection (DEP). This evaluation is called a Source Water Assessment Program (SWAP). The SWAP found that the watersheds for the Brockton Water System are primarily a mix of underdeveloped forest (42% for Silver Lake 38% for Brockton Reservoir), residential development (23% and 14%). Agriculture, industry 18% for Brockton Reservoir) commercial uses and protected open space. The Hubbard Avenue Well which is only used in an emergency has an Interim Wellhead Protection Area (IWPA) that contains predominantly residential (35%), commercial (21% and industrial

(8%) uses, with some forest. In the SWAP the Brockton Water System was commended for taking an active role in implementing source protection measures. The SWAP is available for review and questions at the Brockton Water Commission Office. Brian Creedon, the Water Systems Manager, is available to answer any questions and is conducting an educational program through the Brockton School System. Further information on the SWAP is available at www.state.ma.us/dep.

Substances found in tap water

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 mineral, and in some cases, radioactive material. It can pick up substances resulting from the presence of animals or from human activity. Contaminants 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, and wildlife.

Inorganic contaminants -such as salts and metals, which can be naturally-occurring or 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 agricultural, 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 can also come from gas stations, urban stormwater runoff, and septic systems.

Radioactive contaminants -which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (EPA) prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) 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 that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA Safe Drinking Water Hotline at 800-426-4791.

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, persons with HIV/AIDS or other immune system disorders, some elderly, and some 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 at 800-426-4791.

IMPORTANT DEFINITIONS

Maximum Contaminant Level (MCL) – the highest level of a contaminant that is allowed in drinking water.

Maximum Contaminant Level Goal (MCLG) – the level of a contaminant in drinking water below which there is no known or expected risk to health.

THE CITY OF BROCKTON WATER DISTRIBUTION SYSTEM
39 Montauk Road, Brockton, MA 02301-Contact Person Brian M. Creedon, 508 580-7825

Email- bcreedon@ci.brockton.ma.us
Public Water System ID 40444000-01S&02S

Maximum Residual Disinfectant Level (MRDL): –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.

Maximum Residual Disinfectant Level Goal (MRDLG) –The level of a drinking water disinfectant below which there is no known expected risk to health.

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

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

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

Secondary – Secondary Drinking Water Standards are unenforceable federal guidelines regarding taste, odor, color, and certain other non-aesthetic effects of drinking water.

ppm – one part per million or milligram per liter

ppb – one part per billion or microgram per liter

NR – not regulated

ND –not detected

N/A – not applicable

WATER QUALITY TESTING RESULTS

The Brockton Water Treatment Plant continuously monitored for forty standard water processing tests including turbidity, pH, alkalinity, hardness, iron, manganese and color. The distribution system (Brockton, Whitman and Hanson) had over 2,300 microbial tests for coliform (over 192/month) and had no positive results (all absent of coliform). The water at both the Silver Lake and the Woodland Avenue Treatment facilities are tested for both Pesticides and herbicides and Organic chemical contaminants (see Substances Found in Tap Water above) with zero detectable contaminants.

The following table includes those of the 84 regulated contaminants that were detected in 2007.

REGULATED CONTAMINANTS
Calendar Year 2007

CONTAMINANT (UNITS)	HIGHEST VALUE	RANGE DETECTED	AVERAGE DETECT	MCL	MCLG	VIOLATION (YES/NO)	POSSIBLE SOURCE OF CONTAMINATION
Turbidity (NTU)	.53	0.05-0.53	.082	TT=5.0 NTU	N/A	No	Soil runoff
Nitrate (ppm)	.35	<.35-.13	.142	10	10	No	Runoff from fertilizer use; leaching from septic tanks, sewage; Erosion of natural deposits
THMs (Haloacetic Acids (ppb)	72.7	6.8-72.7	26.9	60	N/A	No	By-product of drinking water chlorination
THMs (Total trihalomethanes (ppb)	129.0	12.7-129.0	51.0	80.0	N/A	No	By-product of drinking water chlorination

LEAD AND COPPER

CONTAMINANT (UNITS)	ACTION LEVEL (AL)	MCLG	90 TH PERCENT LEVEL	# OF SITES TESTED	# OF SITES ABOVE AL	VIOLATION (YES/NO)	POSSIBLE SOURCE OF CONTAMINATION
Lead (ppb) Second Quarter	15	15	.007	58	1	NO	Sampled corrosion of household plumbing systems
Lead (ppb) Fourth Quarter	15	15	.003	60	1	NO	Sampled corrosion of household plumbing

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							systems
Copper (ppm) Second Quarter	1.3	1.3	..070	58	1	NO	Sampled corrosion of household plumbing systems
Copper (ppm) Fourth Quarter	1.3	1.3	.080	60	1	NO	Sampled corrosion of household plumbing systems

Lead: Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and flush your tap for 30 seconds to 2 minutes (until it feels cold) before using tap water. Additional information is available from Safe Drinking water Hotline at 800 426-4791

Please note that the Brockton Water Department in conjunction with the Massachusetts Department of Environmental Protection (DEP), the Brockton School System and the US Environmental Protection Agency (EPA) will be testing all available Drinking Water faucets in all Brockton Schools in the last quarter of 2008. We have always tested these schools but are doing a school system- wide testing.

NON-REGULATED CONTAMINANTS

CONTAMINANT (UNITS)	HIGHEST VALUE	RANGE DETECTED	AVERAGE DETECT	MCL	MCLG	VIOLATION (YES/NO)	POSSIBLE SOURCE OF CONTAMINATION
Sodium (ppm)	81.4	24.3-81.4	27.4	N/A	N/A	No	By product of drinking water treatment; road runoff

Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

The source water was tested for *Cryptosporidium* and none was detected.

There were no microbial contaminants, such as viruses and coliform bacteria found in any testing of the City of Brockton water system.

There were no violations in monitoring for Lead and Copper system-wide.

There was no detection of arsenic.

Brockton water is monitored continuously and has a hardness of 20 to 40 ppm, and is considered soft. This is important as less detergent is needed when using washing machines or dishwashers.

Treatment Techniques

Activated Charcoal Filtration with coagulation, flocculation and sedimentation:

Small particles and organisms such as sediment, algae and bacteria can cause water to take on unpleasant odors or taste, and can sometimes make it unhealthy to drink. To remove this material, it is necessary to chemically treat the water and then pass it through an activated charcoal filter.

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The process begins with alum being added to the water at an established rate. This prompts the small particles to coagulate, or stick together and form particles of increasing size. Heavier particles to sink to the bottom of large settling basins while the cleaner water flows onto filter beds. Filters are comprised of several layers, which trap the small particles that did not settle out previously. Finally the activated charcoal removes organic particles left in the water. Each day these filters are cleaned by a backwash process. The water is then chlorinated to prevent any bacterial contamination.

The Commonwealth of Massachusetts, Department of Environmental Protection approves all chemicals used for coagulation for water treatment. Chemicals also have to meet performance standards established by the American Water Works Association.

ConServation Tips

- Change or clean your faucet aerator at least once a year.
- Check your meter – the red triangle on the meter should not be moving if there is no water being used.
- Check toilet(s) – put food coloring in the tank (DO NOT FLUSH). After approximately 30 minutes, if any of the coloring appears in the bowl, there is a leak.
- Water garden/lawn in the morning or in the evening with hand held hose.
- Collect rainwater in containers to water plants.
- Install water savers on all faucets, including showerheads.
- Fix leaking faucets.
- Fill sink rather than leaving tap running when shaving, washing hands or doing dishes.
- Do not run water when brushing teeth.
- Run washing machine or dish washer only when full.
- Take shorter showers.
- Water lawns less frequent when allowed but for longer periods to develop deeper, healthier root growth.
- SAVING WATER SAVES MONEY

Your Water Bill

Please be aware that most meters are read by an automated telephone reading system or a touch pad system. These bills should have an “A” (Actual) next to the current reading. If your bill shows any letter other than an “A” your bill may have been estimated due to a problem in communicating with our computer system. In order to have this problem corrected, please contact our meter division at 508-580-7865 to have your metering system serviced or your meter read.

- Water should have an “A” after Current Read
 - If it is “E” your usage is estimated
 - If it is “C” it is a manual estimate
 - If it is “P” your meter has a problem
 - If it is “T” it is for minimum usage

Call the Meter Repair Foreman at 508 580-7865 to fix your meter.

IF YOU HAVE QUESTIONS

About	Call	Telephone
USAGE or CHARGE Refuse	DPW Billing – Refuse	(508) 580-7827
USAGE or CHARGE Sewer	DPW Billing – Sewer	(508) 580-7137
USAGE or CHARGE Water	DPW Billing – Water	(508) 580-7143
Payment/INTEREST or PAST DUE	Tax Collector’s Office	(508) 580-7130
Water or Sewer SERVICE	Utilities Division	(508) 580-7865
Meter Readings	Meter Division	(508) 580-7865
Refuse	Allied Waste Services (BFI)	(800) 425-0095
Recycling	Recycling Depot	(508) 580-7827
Water Connections	Water Commission	(508) 580-7825
General Information	DPW Commissioner	(508) 580-7135
24-Hour Emergency Water Service	Utilities Division	(508) 580-7865
24-Hour Emergency Sewer Service	Utilities Division	(508) 580-7880

YOUR COST OF WATER

On July 1, 2008 the water rates change. Water usage is billed quarterly at the rates listed below per 100 cubic feet (approximately 748 gallons).

USAGE in Cubic Feet	Water rate per 100 cubic feet
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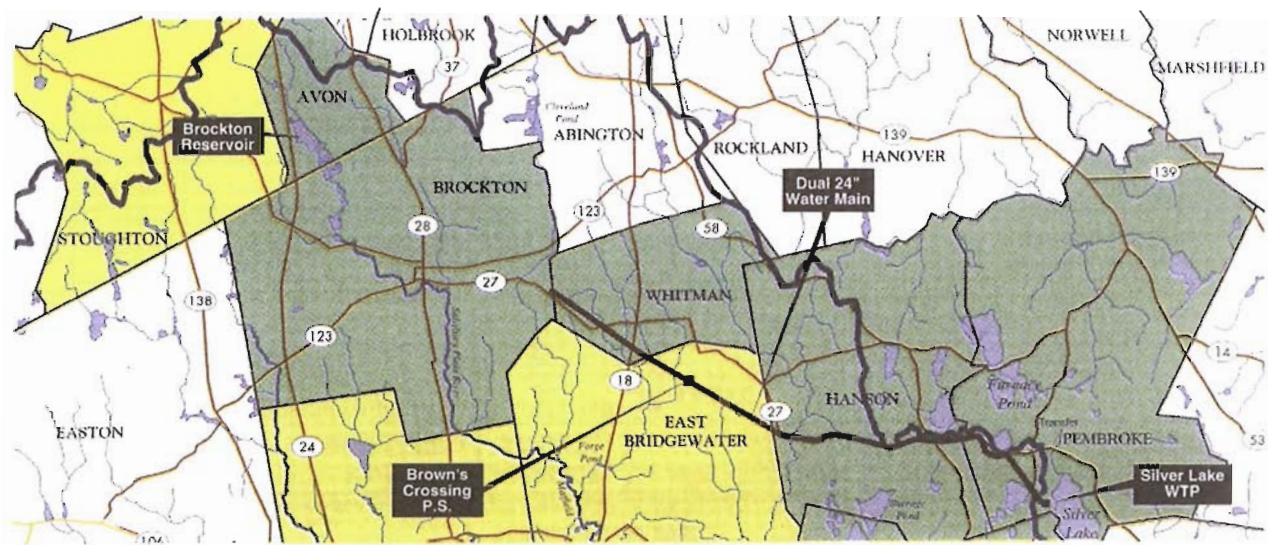
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0 to 1,250	\$2.99
1,251 to 2,500	\$3.81
2,501 to 5,000	\$5.17
5,001 to 10,000	\$5.62
10,001 to 25,000	\$5.87
25,001 to 875,000	\$6.11
Greater than 875,001	\$6.11

The Brockton Water Commission meets at 39 Montauk Rd. on the first and third Tuesday's of most months. Copies of this report may be obtained and test results can be reviewed at the Commission's office.

CITY OF BROCKTON



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