



Aaron River Reservoir

2002 Water Quality Report

Cohasset Water Department, 339 King Street, Cohasset, MA 02025 ID# 3065000 (781) 383-0057 July 1, 2002

The Cohasset Water Department, under the direction of the elected Board of Water Commissioners, provides public drinking water for about 7,100 Cohasset residents, almost 90% of the population of Cohasset (excluding North Cohasset which get its water from the Aquarion Water Company of Massachusetts, formerly the Hingham Mass-American Water Company), and provides and maintains a water system for fire fighting.

This Annual Water Quality Report describes water sources and water quality for 2001. We are pleased to report that your drinking water meets or exceeds all applicable drinking water standards.

Where Your Water Comes From

Your drinking water comes from two surface water supplies, Lily Pond (DEP ID# 065-01S) and the Aaron River Reservoir (ID# 065-02S), pictured above. Lily Pond is 52 acres in size, and is supplemented when necessary with water from the Reservoir, which contains a maximum of 323 million gallons of water.

The watershed for Lily Pond and the Reservoir (see enclosed map) covers an area of 5,892 acres, 9.21 square miles. Only 2,339 acres (or 40%) is in Cohasset. The safe yield of our surface water supplies is 3.5 million gallons per day (gpd). Our average daily demand is about 710,000 gallons per day, and the maximum daily demand, during the summer, is

currently about 1.7 million gpd. Projections show that our existing water supply will be capable of meeting water system demand for the next 20 years or more.

Our two wellfields, the Sohier Street Wells (ID# 065-01G & 03G) and the Ellms Meadow Wellfield (ID# 065-02G), are currently out of service but are planned to be reactivated in the next few years.

Water Supply Protection Plan

The Water Commission, through our consultant, Norfolk RAM Group LLC, is currently preparing a comprehensive Surface Water Supply Protection Plan for the Reservoir and Lily Pond. The draft report will be reviewed at a public hearing and will be made available to the public when it is completed.

Water System Improvements

In 2001, to improve water quality and fire protection, the Water Commission:

- Rehabilitated 9,308 feet (just under 2 miles) of water mains; we replaced 2,329 feet of undersized mains and cleaned & lined 6,979 feet.
- Flushed the entire distribution system.
- Replaced 24 fire hydrants.
- Replaced the flocculation and sedimentation basins at the Treatment Plant.
- Cleaned, repaired, & painted Bear Hill tank.
- Installed new wells at Ellms Meadow Wellfield.

2001 Cohasset Water Quality Results

The Cohasset Water Department tests for over 80 contaminants on a regular basis, in accordance with State and Federal requirements. The following contaminants were the only ones detected in the most recent testing required under the regulations for each category of contaminants. *There were no violations of any applicable water quality regulation.*

Regulated Contaminants	Date(s) Collected	Highest Detect	Range Detected	Highest Average	MCL or MRDL	MCLG or MRDLG	Violation (Y/N)	Possible Source(s) of Contamination
Inorganic Contaminants								
Barium (ppm)	5/22/01	0.014	n/a	n/a	2	2	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Fluoride (ppm)	Daily	1.29	1.00 - 1.29	1.11	4	4	No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Volatile Organic Contaminants								
Chlorine (ppm)	Daily	1.95	1.00 - 1.95	1.35	4	4	No	Water additive used to control microbes
Total Trihalomethanes (TTHMs) (ppb) (1)	10/18/00,11/27/00 6/26/01, 9/19/01	130.5	41.4 - 130.5	66.6	80	-----	No	Byproduct of drinking water chlorination
Haloacetic Acids (HAC's) (ppb) (1)	11/27/00	65	----	----	60	-----	No	Byproduct of drinking water disinfection
Radioactive Contaminants								
Gross Alpha (pCi/l) (minus uranium)	3/21/00	1.7	----	----	15	0	No	Erosion of natural deposits
Gross Beta/Photon emitters (pCi/L)	3/21/00	1.3	----	----	50	0	No	Decay of natural and man-made deposits
Synthetic Organic Contaminants								
Hexachlorocyclopentadiene (ppb)	6/21/00	0.1	----	----	50	50	No	Discharge from chemical factories
Lead & Copper (2) <i>(20 sites sampled each)</i>	Date(s) Collected	90th Percentile	Action Level	MCLG	# sites above Action level	Violation?	Possible Sources of Contamination	
Lead (ppb)	8/22/01	12	15	0	2 of 20	No	Corrosion of household plumbing systems; Erosion of natural deposits	
Copper (ppm)	8/22/01	0.318	1.3	1.3	0 of 20	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives	
Turbidity	TT	Lowest Monthly % of Samples	Highest Detected Daily Value		Violation?		Possible Sources of Contamination	
Daily Compliance (NTU)	5	----	0.09		No		Soil Runoff	
Monthly Compliance	At least 95%	100%	----		No			
Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of water quality.								
<i>*Monthly turbidity compliance is related to a specific treatment technique (TT). Our system filters the water so at least 95% of our samples each month must be below the turbidity limits specified in the regulations.</i>								
Unregulated Contaminant (3)	Date(s) Collected	Result	Average Detected	SMCL	ORSG	Possible Sources of Contamination		
Inorganic Contaminants								
Sodium (ppm)	5/22/01	29.7	n/a	----	20	Natural sources; runoff from use as salt on roadways; by-product of treatment process		
Nickel (ppm)	5/22/01	0.001	n/a	----	0.1	Discharge from industrial processes		
Sulfate (ppm)	5/22/01	26.3	n/a	250	----	Natural sources		

(1) Cohasset is not required to test for HAC's or TTHM's, because systems serving less than 10,000 are not required to comply with monitoring of MCL's for them, but we are voluntarily testing for HAC's & TTHM's. We are taking measures to reduce HAC's & TTHM levels in drinking water (such as rehabilitating water mains and flushing the system).

(2) We received a monitoring waiver in 1998 for Lead & Copper and were required to test for them every three years.

(3) Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining their occurrence in drinking water and whether further regulation is warranted. Exceeding a SMCL or ORSG for an unregulated contaminant is not a violation. We are taking action to reduce sodium levels.

Health Effects of Some Detected Contaminants

Although there were no exceedances of any applicable water quality regulation, following are the health effects for the contaminants that were detected in relatively high concentrations.

Haloacetic Acids. Some people who drink water containing HAC's in excess of the MCL over many years may have an increased risk of getting cancer.

Sodium. There is no state or federal MCL for sodium. Monitoring is required to provide information to consumers and health officials that are concerned about sodium intake due to dietary precautions. If the level is over 20 ppm, and you are on a sodium-restricted diet, you should consult a physician about this level of sodium in the water.

Total Trihalomethanes (TTHM's). Some people who drink water containing trihalomethanes in excess of the MCL over many years experience

Educational Statement on 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. Flush your tap for 30 seconds to 2 minutes before using tap water to reduce lead content. Additional information is available from the Safe Drinking Water Hotline, 1-800-426-4791.

problems with their liver, kidneys, or central nervous system. They may have an increased risk of getting cancer.

Definitions

- **90th Percentile.** Out of every 10 homes, 9 were at or below this level.
- **pCi/L.** Picocuries per liter (a measure of radioactivity).
- **ppb** - parts per billion, or micrograms per liter (ug/l)
- **ppm** - parts per million, or milligrams per liter (mg/l)
- **AL (Action Level).** The concentration of a contaminant that, if exceeded, triggers treatment or other requirements which must be followed.
- **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's 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 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 microbiological contamination.
- **MRDLG (Maximum Residual Disinfectant Level Goal).** The level of a drinking water disinfectant which there is no known or expected risk to health. MCLG's do not reflect the benefits of the use of disinfectants to control microbiological contaminants.
- **NTU** - Nephelometric Turbidity Units; a measure of how clear the water is.
- **ORSG. Massachusetts Office of Research and Standards Guideline** – This is the concentration of a chemical in drinking water, at or below which, adverse health effects are unlikely to occur after chronic (lifetime) exposure. If exceeded, it serves as an indicator of the potential need for further action.
- **SMCL.** Secondary Maximum Contaminant Level – These standards are developed to protect the aesthetic qualities of drinking water and are not health based.
- **TT (Treatment Technique)** - 95% of all monthly samples taken must be less than or equal to 0.50 NTU
- **Variations & Exemptions** – State or EPA permission not to meet an MCL or a treatment technique under certain conditions.

Contaminants in Drinking Water

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's Safe Drinking Water Hotline (1-800-426-4791).

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 and, in some cases, radioactive material, and 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 agriculture, urban stormwater runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts 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.

To ensure that tap water is safe to drink, the DEP and EPA prescribe regulations which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) and the Mass. Department of Public Health (DPH) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Caution for Vulnerable Populations

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 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 (1-800-426-4791).

Help Protect Water Quality

- Maintain your septic system properly.
- Don't pour motor oil, gasoline, antifreeze, or other hazardous chemicals down the drain or on the ground. Properly dispose of them at a Household Hazardous Waste day; and recycle used motor oil.
- Use the minimal amount of fertilizer, herbicides & pesticides on your lawn.
- Use non-toxic fertilizers, such as compost, on your lawn.

Community Participation:

- We encourage public interest and participation in our town's decisions affecting drinking water.
- The Water Commission usually meets every other week at 8:00 pm at the Lily Pond Water Treatment Plant, 339 King Street. Meeting notices are posted at Town Hall. Please feel free to attend and to participate in our meetings.
- Please call the Water Department at 383-0057 (fax 383-2906) or call any of the Water Commissioners, with any questions, comments or concerns.
- Chairman John McNabb can be reached at 383-6202 or at mcnabbj@mindspring.com.
- Copies of this report are available at the Water Dept., Town Hall, and at the Paul Pratt Memorial Library.

Board of Water Commissioners

Town of Cohasset

John K. McNabb, Jr., Chairman

Robert E. Kasameyer, Vice-Chairman

Glenn A. Pratt, Clerk
