2004 Annual Drinking Water Quality Report
For
Gardner Water Department
Operated by Earth Tech, Inc.
Gardner, Massachusetts
DEP PWSID # 2103000

Ce rapport contient des information importantes concernant votre eau potable. Veuillez traduire, ou parlex avec quelqu' un qui peut le comprendre.

This report is a snapshot of drinking water quality that we provided last year. Included are details about where your water comes from, what it contains, and how it compares to state and federal standards. We are committed to providing you with information because informed customers are our best allies.

I. PUBLIC WATER SYSTEM INFORMATION

Address: Crystal Lake Water Treatment Facility, 99 Heywood Street Gardner MA 01440

Contact Person: Steve Wold

Telephone #: 978-630-8791 Fax #: 978-630-8792

Water System Improvements
Our water system is routinely inspected by the Department of Environmental Protection (DEP). The DEP inspects our system for its technical, financial and managerial capacity to provide safe drinking water to you. To ensure that we provide the highest quality of water available, your water system is operated by a Massachusetts certified operator who oversees the routine operations of our system.

Opportunities for Public Participation
If you would like to participate in discussions regarding your water quality, you may attend the Public Service Committee meetings. They are held every month just prior to each months first City Council Meeting. Attending these meetings will allow you to discuss and learn information about your water system. You may also contact Earth Tech at the Crystal Lake Water Treatment Facility for information.

II. YOUR DRINKING WATER SOURCE

Where Does My Drinking Water Come From?
Your drinking water is treated from surface water supplies that are comprised of Cowee Pond, Perley Brook Reservoir and Crystal Lake, all of which are located within the City of Gardner. Water naturally flows by gravity from Cowee Pond to Perley Brook Reservoir and is then pumped to Crystal Lake. Six hundred forty-six million gallons were treated from Crystal Lake in 2004 and distributed to the City.

Crystal Lake Water Treatment Facility was completed in May of 2000. The treatment plant uses ultra filtration membrane filters and has a production capacity of 3.0 million gallons per day.

The Snake Pond Well was originally completed in November of 2000. It was found unable to acceptably treat the amount of manganese and iron that is naturally in the ground water and thereby shutdown. It is being upgraded at this time to be able to treat the high levels of these metals and is expected to go back on line in the fall of 2005. Snake Pond Well did not treat and distribute any water in 2004.

There are three (3) drinking water storage tanks in Gardner. They are above ground storage tanks and are used to help ensure a safe reliable supply of drinking water and to provide fire protection. The combined capacity of these storage tanks is 4.75 million gallons.

Water Conservation

In May 2001, the City of Gardner declared a State of Water Supply Conservation and imposed a mandatory odd & even water use restriction that limits outdoor water use to odd & even numbered days with the corresponding odd & even address numbers. This restriction will remain in effect for 2005, especially because the Snake Pond Well in not in use.

Water is a valuable resource that should not be wasted. Abide by local water use restrictions – for the City of Gardner they are:

A **LEVEL 1 – Voluntary Water Ban** requests customers to voluntarily conserve water.

A **LEVEL 2 – Mandatory Water Ban** limits outdoor water irrigation to odd / even days only.

A **LEVEL 4 Mandatory Water Ban** prohibits all outdoor water use except for commercial agricultural, commercial floricultural, or commercial horticultural uses at ones principal, permanent place of business.

For June through September 2004

A **LEVEL 3 – Mandatory Water Ban** limits outdoor irrigation with hand held devices to 7:00 p.m. to 7:00 a.m. and automatic sprinkler systems to 4:00 a.m. to 6:00 a.m. on odd / even days only AND filling of swimming pools and residential car washing is prohibited.

Is My Water Treated?

Our water system makes every effort to provide you with safe and pure drinking water. To improve the quality of the water delivered to you, we treat it to remove several contaminants.

- We add sodium hypochlorite and ammonium sulfate are added to protect you against microbial contaminants.
- We add aluminum sulfate to coagulate the dirt particles within the untreated water to help the ultra filtration process.
- We filter the water to remove small particles and organisms such as sediment, algae and bacteria.
- We chemically treat the water to reduce lead and copper concentrations from leaching out of your household plumbing.
- We add fluoride to the water to aid in dental health and hygiene.
- We add soda ash to adjust the pH of the water to assist in corrosion control of the drinking water distribution system.
- We chemically treat the water to reduce levels of iron and manganese.

Earth Tech and DEP regularly monitor the quality of the water. It is monitored to determine the effectiveness of the existing water treatment and to determine if any additional treatment is required. Our water system makes every effort to provide you with safe and pure drinking water.

How Are These Sources Protected?

The Department of Environmental Protection (DEP) has prepared a Source Water Assessment Program (SWAP) Report for the water supply source(s) serving this water system. The SWAP Report assesses the susceptibility of each source of public water supplies.

The SWAP Report notes the key issues of

- Activities in the Zone 1 and A (the areas surrounding the sources).
- Residential land uses.
- Transportation corridors.
- Hazardous material storage and uses.
- Oil or hazardous material contamination sites.
- Aquatic wildlife.
- Golf course maintenance.
- Comprehensive wellhead protection plan in the water supply protection area for Cowee Pond, Perley Brook and Crystal Lake.

What is My System's Ranking?
A susceptibility ranking of HIGH was assigned to this system using the information collected during the assessment by the DEP.

What Can Be Done To Improve Protection?
The SWAP report recommends:

- Inspect Zone 1 and A on a regular schedule.
- Educate businesses and residents on ways to help protect water sources.
- Partnership with emergency response teams to ensure they are aware of runoff to drainage areas within the watersheds when responding to spills.
- Inform and work with local businesses to educate them about the proper disposal and storage of hazardous materials.
- Monitor and access ongoing remedial actions conducted for known oil or contamination sites.
- Implement a wellhead and surface water supply protection plan.

Our public water system plans to address the protection recommendations by:

- Posting of sources and informing the public and businesses of their role in protecting our water supplies.
- Input and information sharing with emergency response teams.

Residents can help protect sources by:

- Practicing good septic system maintenance
- Supporting water supply protection initiatives
- Taking hazardous household chemicals to hazardous materials collection days
- Contacting the water department or Board of Health to volunteer for monitoring or education outreach to schools
- Limiting pesticide and fertilizer use, etc.

Where Can I See The SWAP Report?
The complete SWAP report is available Water Department and the office of the Board of Health. Both of these offices are within Gardner City Hall.

III. 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 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 that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

Inorganic contaminants -such as salts and metals that can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, and farming.

Pesticides and herbicides -that 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 that are by-products of industrial processes and petroleum production. They 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 Department of Environmental Protection (DEP) and U.S. Environmental Protection Agency (EPA) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) and Massachusetts Department of Public Health (DPH) 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's Safe Drinking Water Hotline (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, people 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/Centers for Disease Control and Prevention (CDC) guidelines on lowering the risk of infection by cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

IV. IMPORTANT DEFINITIONS

Maximum Contaminant Level (MCL) – 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.

Maximum Contaminant Level Goal (MCLG) –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.

Maximum Residual Disinfectant Level (MRDL) -- The highest level of a disinfectant (chlorine, chloramines, chlorine dioxide) 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 (chlorine, chloramines, chlorine dioxide) below which there is no known of expected risk to health.
MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.

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 that a water system must follow.

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

ppm = parts per million, or milligrams per liter (mg/l)
ppb = parts per billion, or micrograms per liter (ug/l)
ppt = parts per trillion, or nanograms per liter
pCi/l = picocuries per liter (a measure of radioactivity)
NTU = Nephelometric Turbidity Units
ND = Not Detected
N/A = Not Applicable
mrem/year = millirems per year (a measure of radiation absorbed by the body)

Secondary Maximum Contaminant Level (SMCL) – These standards are developed to protect the aesthetic qualities of drinking water and are not health based.

Massachusetts Office of Research and Standards Guideline (ORSG) – 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.

V. WATER QUALITY TESTING RESULTS

What Does This Data Represent?
The water quality information presented in the table(s) is from the most recent round of testing done in accordance with the regulations. All data shown was collected during the last calendar year unless otherwise noted in the table(s).

	Date(s) Collected	90TH percentile	Action Level	MCLG	# of sites sampled	# of sites above Action Level	Possible Source of Contamination
Lead (ppb)	**7/27/04**	**9**	**15**	**0**	**30**	**3**	Corrosion of household plumbing systems; Erosion of natural deposits
Copper (ppm)	**7/27/04**	**0.14**	**1.3**	**1.3**	**30**	**0**	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

Turbidity	TT	Lowest Monthly % of Samples	Highest Detected Daily Value	Violation (Y/N)	Possible Source of Contamination
Daily Compliance (NTU)	**5**	**-----**	**0.22**	**N**	**Soil runoff**
Monthly Compliance*	**At least 95%**	**100**	**-----**	**N**	
Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of water quality.					
*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.					

Regulated Contaminant	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)	**5/18/04**	**0.02**	**0.016 - 0.02**		**2**	**2**	**N**	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Fluoride (ppm) ■	**9/25/04**	**1.28**	**0.194 – 1.28**		**4**	**4**	**N**	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate (ppm)	**5/18/04**	**0.7**	**0.7 – 0.7**		**10**	**10**	**N**	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits
Disinfection Byproducts								
Chlorine (ppm)	**2/23/04**	**3.84**	**0.30 – 3.84**		**4**	**4**	**N**	Water additive used to control microbes
Haloacetic Acids (HAA5) (ppb)	**3/30/04**	**25**	**ND – 25**		**60**	**-----**	**N**	Byproduct of drinking water disinfection
Total Trihalomethanes (TTHMs) (ppb)	**9/22/04**	**16.0**	**6.8 – 16.0**		**80**	**-----**	**N**	Byproduct of drinking water chlorination

■ Fluoride also has a secondary contaminant level (SMCL) of 2 ppm.

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 future regulation is warranted.

Unregulated Contaminant	Date(s) Collected	Result or Range Detected	Average Detected	SMCL	ORSG	Possible Source
Inorganic Contaminants						
Sodium (ppm)	**5/18/04**	**46.0 – 46.0**	**46.0**	**----**	**20**	Natural sources; runoff from use as salt on roadways; by-product of treatment process
Sulfate (ppm)	**5/18/04**	**24.0 – 24.0**	**24.0**	**250**	**----**	Natural sources
Organic Contaminants						
Bromodichloromethane (ppb)	**10/29/04**	**2.30 – 4.90**	**3.77**	**---**	**---**	By-product of drinking water chlorination

Unregulated Contaminant	Date(s) Collected	Result or Range Detected	Average Detected	SMCL	ORSG	Possible Source
Bromoform (ppb)				---	---	By-product of drinking water chlorination
Chloroform (ppb)	**3/30/04**	**3.50 – 12.00**	**8.35**	---	---	By-product of drinking water chlorination
Dibromodichloromethane (ppb)	**9/22/04**	**ND – 1.70**	**1.13**	---	---	By-product of drinking water chlorination

VI. COMPLIANCE WITH DRINKING WATER REGULATIONS

Does My Drinking Water Meet Current Health Standards?

We are committed to providing you with the best water quality available. We are proud to report that last year your drinking water met all applicable health standards regulated by the state and federal government.

VII. EDUCATIONAL INFORMATON

Do I Need To Be Concerned About Certain Contaminants Detected In My Water?

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 before using tap water. Additional information is available from the Safe Drinking Water Hotline at 800.426.4791.

Sodium-sensitive individuals, such as those experiencing hypertension, kidney failure, or congestive heart failure, should be aware of the sodium levels where exposures are being carefully controlled.

PRESORTED
STANDARD
U.S. POSTAGE PAID
GARDNER,MA
PERMit#75

EarthTech
A Tyco International Ltd. Company

City Water Department
Crystal Lake Water Treatment Facility
99 Heywood Street
Gardner, MA 01440-1321

2004 Annual Drinking Water Quality Report