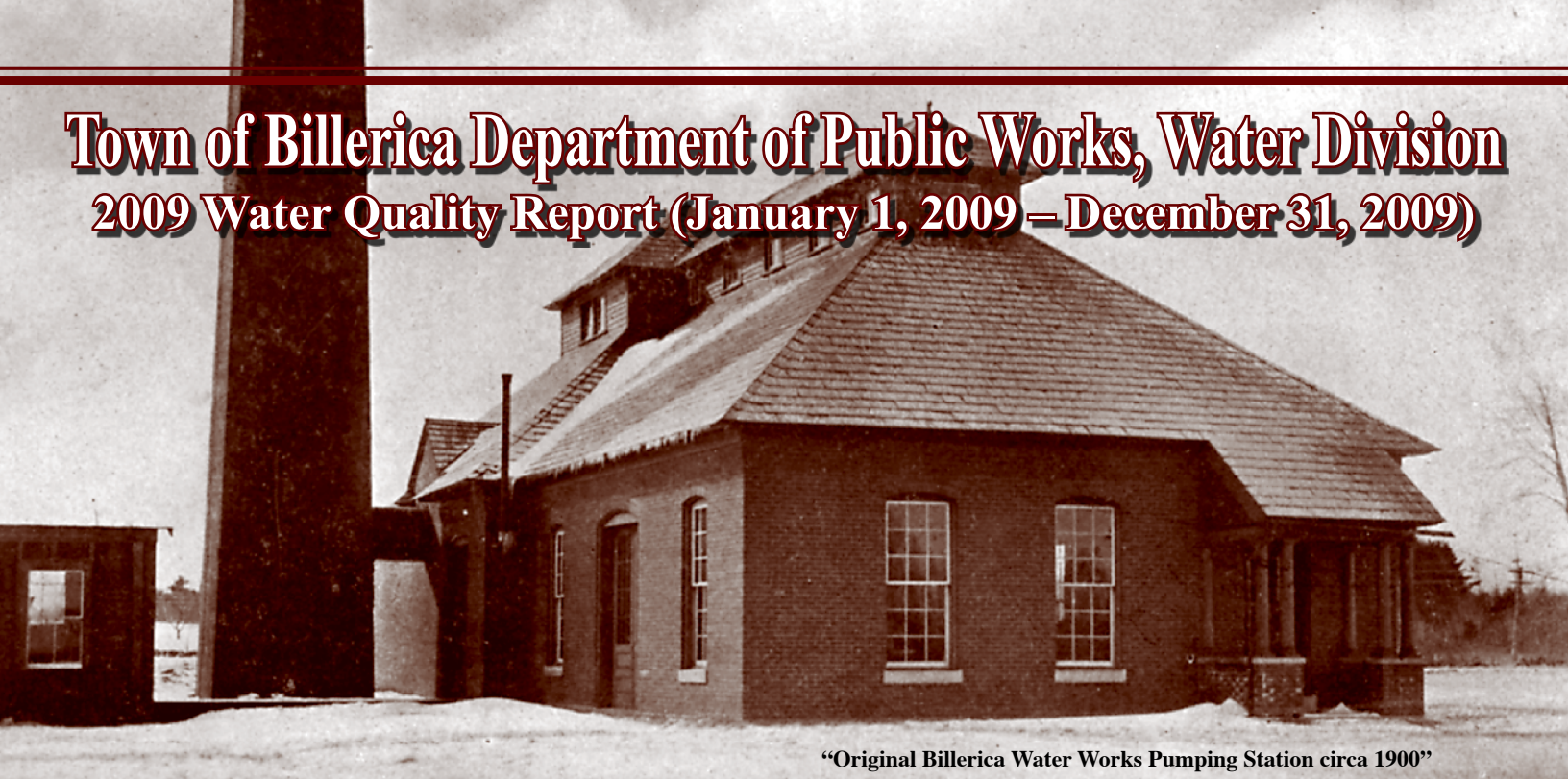


# Town of Billerica Department of Public Works, Water Division

## 2009 Water Quality Report (January 1, 2009 – December 31, 2009)



“Original Billerica Water Works Pumping Station circa 1900”

*Dear Water Customer,*

*Welcome to the Annual Water Quality Report for Billerica. We hope you find this report helpful in understanding where your drinking water comes from, what processes we undertake to make it safe to drink, and what issues we face in procuring, treating and providing this vital resource to you.*

*Current events at the local and even global levels have mandated that everyone- residents, businesses, and municipalities appraise their way of life.*

*Economic downturns, spiraling costs of everything from fuel, energy, consumer goods and treatment supplies have forced many people to make changes in how they conduct business and perform their daily tasks.*

*For the Water Division we have seen treatment chemical increases as high as 200% for some processes. Our employees have been busy researching and studying ways of decreasing the cost of how we do business, while providing excellent quality water to you.*

*As we are faced with decreased funding, we continue to work hard to provide the highest level of service possible, even with a diminished level of staffing. Some of the work performed in 2009 is noted in this report*

To our non-English speaking customers:

This report contains important information regarding the quality of your drinking water. Please have this report translated.

*Water Conservation has become a global concern, with a multitude of research studies being conducted to determine best practices on conservation, new treatment processes and waste water reuse systems. Read more about these issues and find resources to help you save precious water and money, inside this report.*

### **How to contact us:**

Telephone: 978-671-0957

FAX: 978-671-0911

Location:

270 Treble Cove Rd.

Billerica, MA 01862

### **Water Division Contact Information:**

John McGovern, Water Superintendent

Ralph McClellan, Asst. Superintendent

John Sullivan, Treatment Chemist

Paul Walsh, Distribution Supervisor

Business Hours: 8:30 am – 3:30 pm



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## WATER CONSERVATION AND YOU

Water Conservation is a phrase that the average American is hearing more frequently. Re-thinking how you use water for gardens and lawns will not only help protect the environment, but will help you save money and be more efficient with your irrigation. Tips and How to's for conserving water can be found in many places, along with products designed to specifically help you save water. Below is an overview of outdoor water conservation products and how they work.

**Rain barrels** – the purpose of a rain barrel is to collect run off water from your roof and its drainage system to be reused for irrigation in your yard and/or garden. There are several styles of rain barrels from a utilitarian 55 gallon barrel to a stylish planter box available in several color choices.

**Roof Gutter Diverters** – these products connect to the end of your rain gutter and divert run off water from your roof to be reused for irrigation in your yard and/or garden. This is done through a device with a threaded hose adapter which can be attached to a garden hose.

**Soaker Hose** – these hoses deliver water only where you want it. A soaker hose is a perforated hose which can be placed in your garden to deliver a slow and steady volume of water to your plants. Soaker hoses are more efficient than sprinklers because they deliver water to the base of plants where it is needed and do not lose as much water to evaporation. Attach a soaker hose to your rain barrel for free irrigation water!



**Irrigation Systems** – there are several types of irrigation systems available, the most common ones are Slotted pipe systems and Drip or Trickle systems. The slotted pipe system consists of a series of pipes connected together to deliver water to your garden. This system consists of several additional devices such as programmable timers, rain sensors and anti-siphon devices. Drip or Trickle irrigation usually consist of the head, tubing and emitters.

These systems also require additional devices such as rain sensors, programmable timers and a backflow prevention.

For more information on Water Conservation devices, accessories and outdoor landscape advice visit one of the following web sites:

[www.eartheasy.com](http://www.eartheasy.com)

<http://nerainbarrel.com>

[www.cleanairgardening.com](http://www.cleanairgardening.com)

[www.composters.com](http://www.composters.com)



National Geographic published a Special Issue in April 2010, titled “Water Our Thirsty World”. This publication includes information on water resources worldwide, the availability of water, how water is used amongst various cultures, and the future sustainability of water. Many people do not realize just how precious a commodity clean safe water is. Below are several of the keynote facts found in this publication.

“Americans use about 100 gallons of water at home each day. Millions of the world’s poor not only subsist on fewer than five gallons per day but have to travel miles to get the water and carry that supply home. Women in developing countries walk an average of 3.7 miles to get water. Forty-six percent of people on Earth do not have water piped to their homes. In 15 years 1.8 billion people will live in regions of water scarcity. 2/3 of our available water is used to grow food. With the Earth’s population growth of 38 million people more a year the demand for water will continue to escalate.” We need to change the way we use water. Find out what you can do to help conserve water or to become a global water advocate.

Visit these sites to see how you can help:

[www.globalwaterinitiative.com](http://www.globalwaterinitiative.com)

[www.waterforpeople.org](http://www.waterforpeople.org)

[www.wateradvocates.org](http://www.wateradvocates.org)

[www.globalwaterchallenge.org](http://www.globalwaterchallenge.org)

## In 2005 Billerica Town Meeting approved Water Conservation By-Laws. These By-Laws outline the four Stage Water Conservation Program.

### Stage I – Effective May 1 – October 1 Annually Voluntary Water Conservation

Outside water usage limited to odd – even allocation program. Odd numbered street addresses may water on odd numbered calendar days and even numbered addresses may water on even numbered calendar days.

### Stage II - Mandatory Water Conservation

Outside water usage limited to odd – even allocation program (described above).

	Residential	Commercial/Industrial
<b>First Violation</b>	<b>Written Citation</b>	<b>Written Citation</b>
<b>Second Violation</b>	<b>\$50.00</b>	<b>\$100.00</b>
<b>Subsequent Violations</b>	<b>\$100.00</b>	<b>\$200.00</b>

### Stage III – Mandatory Water Conservation

Lawn sprinklers, irrigation systems, soakers and unattended hoses forbidden. Outside water usage restricted to use of hand held hose for no more than one (1) hour during off-peak hours as determined by the DPW Director.

	Residential	Commercial/Industrial
<b>First Violation</b>	<b>Written Citation</b>	<b>Written Citation</b>
<b>Subsequent Violations</b>	– termination of service plus costs of termination and restoration.	

### Stage IV – Total Mandatory Water Conservation

All outside water use is forbidden.

	Residential	Commercial/Industrial
<b>First Violation</b>	<b>Written Citation</b>	<b>Written Citation</b>
<b>Subsequent Violations</b>	– termination of service plus costs of termination and restoration.	

Our water customer’s response to our Water Conservation Program has been wonderful. Below are some of the most frequently asked questions we receive about water conservation.

#### ***How do I know when I can water outside?***

Signs are posted around Town with the current Water Ban status. Stage I and Stage II water bans are odd/even programs. If your address is odd numbered you may water on odd numbered days, if you are even numbered you may water on even numbered calendar days. All may water on the 31st of the month.

#### ***How can I prevent my irrigation system from running on the wrong day?***

Most irrigation systems are installed with a timing device which can be programmed for day of the week and sometimes even time of day watering. If your system does not have this feature we strongly recommend you contact your installer to add this to your system.

#### ***How can I prevent my irrigation system from running when it is raining out?***

A device called a rain sensor can be added to your system, this device senses moisture and prevents your system from running in the rain. If you do not have a rain sensor contact your installer for one.

#### ***How often should I water my grass?***

Studies have shown that one inch of water a week is all that is needed to maintain a healthy lawn. Use a rain gauge or a water cup to track how much rainfall has occurred and to determine how much watering is needed. This method will promote strong root growth in your lawn which will help it to survive longer with less water.

## Where Does Our Drinking Water Come From?

The Town of Billerica uses water from the Concord River to provide our drinking water. The water that our system pumps and treats is known as surface water.



The Watershed above our point of intake is over 400 square miles and lies in all or part of 27 cities and towns. Within that watershed area there are several land use types that have been identified as potential sources of contamination in the source water.

**Agricultural Land Uses include:** Fertilizer Storage or Use, Landscaping, Nurseries, and Pesticide Storage or Use.

**Commercial Land Uses include:** Airports, Service Stations, Bus & Truck Terminals, Dry Cleaners, Medical Facilities, Printing Shops, and Research Laboratories.

**Industrial Land Uses include:** Electronic Manufacturers, Hazardous Materials Storage, and Machine/metal Working Shops.

**Residential Land Uses include:** Fuel Storage, Lawn care/Gardens, and Septic Systems.

**Miscellaneous Land Uses include:** Above Ground Storage Tanks, Oil or Hazardous Material Sites, Large, Small and Very Small Hazardous Waste Generators, Industrial Wastewater Treatment Facilities and Transportation Corridors.

## Sources of Drinking Water Contamination

Sources of drinking water (both tap 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, can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, farming and mining.

**Pesticides and Herbicides**, which may come from a variety of sources such as agriculture, storm water runoff and residential uses.

**Organic Chemical Contaminants**, include synthetic and volatile organic chemicals that are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff and septic systems.

**Radioactive Contaminants**, which can be naturally occurring or be the result of oil and gas production and mining activities.

## Source Water Assessment Report (SWAP)

What is SWAP? The Source Water Assessment and Protection Program (SWAP), established under the Federal Safe Drinking Water Act, requires every state to:

Inventory land uses within the recharge areas of all public water supply sources; assess the susceptibility of drinking water sources to contamination from these land uses; and publicize the results to provide support for improved protection.



## What is My System's Ranking?

A susceptibility ranking of high was assigned to this system using the information collected during the assessment by DEP. Susceptibility is a measure of a water supply's potential to become contaminated due to land uses and activities within its recharge area. A source's susceptibility to contamination does not imply poor water quality.

The SWAP Report for Billerica is available at <http://www.mass.gov/dep/water/drinking/swapreps.htm>

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## What is a Cross Connection?

A cross connection is a connection between a drinking water pipe and a polluted source. The pollution can come from your own home. For instance, you're going to spray fertilizer on your lawn. You hook up your hose to the sprayer that contains the fertilizer. If the water pressure drops (say because of fire hydrant use in town) when the hose is connected to the fertilizer, the fertilizer may be sucked back into the drinking water pipes through the hose. Using an attachment on your hose called a backflow prevention device can prevent this problem.

The Billerica Water Division recommends the installation of backflow prevention devices, for all inside and outside hose connections. These may be purchased at your local hardware store. For additional information on cross connection please contact the Water Division at 978-671-0957.

## How Is My Water Treated To Make It Safe?

In 2009 the Billerica Water Division treated and delivered 1,665,353,000 gallons of water. Because our drinking water source is a surface water, we require more treatment because we are directly exposed to the atmosphere and storm water runoff from rain and melting snow. The Billerica Water Division uses a variety of treatment processes to remove contaminants from drinking water. Some of the methods used are described below:

### **Flocculation:**

This step removes dirt and other particles suspended in the water. Aluminum Sulfate is added to the water to form tiny sticky particles called "floc", this attracts the dirt particles.

### **Sedimentation:**

The flocculated particles then settle out of the water, to the bottom of the settling basins.

### **Filtration:**

The water is then passed through filters to remove any remaining particles from the water. Filtration clarifies the water and enhances the effectiveness of disinfection.

### **Disinfection:**

To eliminate disease carrying organisms, it is necessary to disinfect the water. Our water is disinfected using Chloramines before it enters the distribution system to ensure that dangerous microbial contaminants are killed. For persons who have fish, reptiles or other small aquatic animals whether in a fish bowl or aquarium, Chloramines must be removed from the water to avoid fish kill. Please consult with your pet supplier for instructions on de-chlorinating the water.

### **Fluoridation:**

Fluoride is a naturally occurring element in many water supplies in trace amounts. In our system the fluoride level is adjusted to an optimal level averaging one part per million (ppm or mg/L) to improve oral health in children. Our water system has been providing this treatment since 1992.

## Disinfection Byproducts

Disinfection of drinking water is one of the major public health advances of the 20th century. However, sometimes the disinfectants themselves can react with naturally occurring materials in the water to form unintended byproducts, which may pose health risks. EPA recognizes the importance of removing microbial contaminants while simultaneously protecting the public from disinfection byproducts, and has developed regulations to limit the presence of these byproducts.

For more information, see [www.epa.gov/safewater/mdbp.html](http://www.epa.gov/safewater/mdbp.html)



*Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contamination. 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 EPA's Safe Drinking Water Hotline (1-800-426-4791).*

*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 infants can be particularly at risk from infections. These people should seek advice 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).*

## Lead in Drinking Water

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. Billerica Water Division 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>

## Should I drink Bottled Water? Surveys show that 35% of bottled water drinkers think it is safer than tap water.

Tap water is safe to drink and inexpensive. Public water suppliers must meet stringent State and Federal drinking water regulations.

Bottled water can cost more than \$1.50 per bottle. Billerica tap water is billed at \$2.30 per 100 cubic feet which is 748 GALLONS. This is a cost of less than a penny per gallon and is delivered right from your tap!



### Buying bottled water is bad news for your:

**Wallet-** the average person spends \$400 a year on bottled water.

**Health-** Plastic water bottles have been found to contain Bisphenol (BPA) which can leach into the water and has been found to cause cancer.

**The Environment-** In 2004 water bottle usage was at 28,000,000,000 a year with 86% of the bottles ending up in the garbage!

It also requires 17,000,000 barrels of oil to produce the bottles and 2,500,000 tons of carbon dioxide are produced from the manufacturing of the bottles.

It is better all around to use a water bottle that is re-usable and refillable.

Visit these sites for more information:

<http://www.earth911.com>

<http://www.filterforgood.com>

<http://www.webmd.com>



## How Safe Is My Drinking Water?

Congress passed the Safe Drinking Water Act (SDWA) in 1974 to protect public health by regulating the nation's public drinking water supply and protecting sources of drinking water. SDWA is administered by the U.S. Environmental Protection Agency (EPA) and its state partners.

EPA has established pollutant-specific minimum testing schedules for public water systems.

If a problem is detected, immediate retesting requirements go into effect along with strict instructions about how the system informs the public. Until the system can reliably demonstrate that it is free of problems, the retesting is continued.

A network of government agencies monitor tap water suppliers and enforce drinking water standards to ensure the safety of public water supplies. These agencies include EPA, Mass. Dept. of Environmental Protection (DEP), Massachusetts Department of Public Health (DPH), and local public health departments.

## What Problems Can Occur?

Actual events of drinking water contamination are rare, and typically do not occur at levels likely to pose health concerns. However, as development in our modern society increases, there are growing numbers of activities that can contaminate our drinking water. Improperly disposed-of chemicals, animals and human wastes, wastes injected underground. And naturally occurring substances have the potential to contaminate drinking water. Likewise, drinking water that is not properly treated or disinfected, or that travels through an improperly maintained distribution system, may also pose a health risk. Greater vigilance by you, your water supplier, and your government can help prevent such events in your water supply.

## How Does Water Get To My Faucet?

An underground network of 225 miles of pipes, also known as the Distribution System, delivers drinking water to the 12,362 service lines in our water system. Drinking water must meet required health standards when it leaves the treatment plant. After treated water leaves the plant, it is monitored within the distribution system to identify and remedy any problems such as water main breaks, pressure variations, or growth of microorganisms.

One of the methods we use to keep our Distribution System healthy is to conduct an annual flushing program. This program is designed to flush out the water mains via fire hydrants to ensure there is no stagnant water in the system.

This is a very beneficial program from which we can study our system and identify any problems that may be present within the system.



## Water Division News

In the spring of 2009 the one (1) million gallon standpipe on Bear Hill was taken off line, sandblasted and repainted with a lead free paint. An additional man way was cut into the tank wall opposite the existing man way. This was done to make the tank compliant with confined space regulations. This work was done by Amstar Co. of Cheektowaga, New York.



Work was also done on one of the two clear wells at the Water Treatment Facility. One of the clear wells was isolated so that it could be drained and inspected. The inspection showed that the clear well was in good condition and no repairs were needed.



The Water Division Leak Detection Program continued in 2009 with water main surveys. 18 leaks were detected below the surface and were repaired. This continues our efforts to locate leaks in our distribution system and halt the unnecessary waste of water.



A water valve exercise program was instituted by our Water Distribution Department. This program surveys and inspects water valves to be sure they are operable and in good working order. Several valves were found to be in disrepair or non-functioning and were repaired or replaced.

Our employees responded to 22 emergency water main breaks during 2009. They also repaired and/or replaced 17 fire hydrants.

## Laboratory News

We are frequently asked or even required to participate in water quality studies beyond our annual required analyses. In May of 2008, the Stage 2 Disinfection By - Product Rule (Stage 2 DBPR) was promulgated, this applied to systems that add a primary or residual disinfectant to their water.

Under the Stage 2 DBPR we were required to conduct Initial Distribution System Evaluation (IDSE) monitoring for Trihalo-methanes (THM) and Haloacetic Acids (HAA5). The results of this testing is included within our TTHM and HAA 5 results in our Water Quality Table.

The Long Term Enhanced Surface Water Treatment Rule (LT2) promulgated in May 2008 applied to systems that use surface water sources. We were required to monitor our raw source water for Cryptosporidium. Our system did not detect any Cryptosporidium in the source water.



EPA required monitoring for List 1 contaminants under the UCMR 2 Rule (Unregulated Contaminant Monitoring Rule). Our system complied with all monitoring requirements for this Rule and had no detection of these contaminants.

As a result of a 2006 EPA Consent decree, we agreed to conduct a study of all Billerica Public Schools for the presence of Lead in the drinking water. This has been an extensive project and has resulted in fixture replacement for any fixtures which detected Lead levels above the Action Level of 15 parts per billion.

Our laboratory personnel were also very busy responding to customer inquiries and conducting field surveys.

### Understanding the Language in this Report

Throughout this report you will see the word contaminant used frequently. This DOES NOT mean the water is contaminated; this term is used to describe the possibility of a contaminant being present in both source water and drinking water. Any substance detected in the drinking water is listed in the Water Quality Summary Tables.



# WATER QUALITY SUMMARY – Public Water Supplier ID # 3031000

The following tables list all of the substances detected in drinking water through the 2009 calendar year. Each year the Water Division is required by Federal and State regulations to conduct extensive water quality testing on drinking water. After the tables you will find abbreviation definitions and notes.

## Regulated Substances

Substance Unit of Measure	MCL (MRDL)	MCLG (MRDLG)	Highest Amount Detected	Range Detected Lowest - Highest		Typical Source
Chlorine (ppm)	4	4	2.5	1.1	2.5	Water additive used to control microbes.
Fluoride (ppm)	4	4	1.3	.08	1.3	Water additive which promotes strong teeth.
Nitrate (ppm)	10	10	1.7	.31	.94	Runoff from fertilizer use; leaching from septic tanks sewage, erosion of natural deposits.
Bromate (ppm)	.010	.010	0.0095			By-product of drinking water disinfection.
Barium (ppm)	2	2	0.021			Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
Chromium (ppm)	100	100	.0012			Discharge from steel and pulp mills; erosion of natural deposits.
Cyanide (ppm)	200	200	.067			Discharge from metal factories; discharge from plastic and fertilizer factories.
Selenium (ppm)	50	50	.0014			Discharge from metal refineries; erosion of natural deposits; discharge from mines.
Contaminant	MCL	Annual Running Average	Range Detected Lowest - Highest			
Total Trihalomethanes TTHMs (ppb)	80	40	18.3	51		By-product of drinking water disinfection.
Haloacetic Acids HAA5s (ppb)	60	17.1	5.2	22.4		By-product of drinking water disinfection.
<b>Total Organic Carbon</b>	<b>TT Annual Average % Removed = 61.9%</b>					Naturally present in the environment.
	<b>Date(s) Collected</b>	<b>90th Percentile</b>	<b>Action Level</b>	<b># of Sites Sampled</b>	<b># of Sites Above Action Level</b>	
Lead ppb	6/07	2	15	30	0	Corrosion of household plumbing, erosion of natural deposits.
Copper ppb	6/07	45	1300	30	0	Corrosion of household plumbing, erosion of natural deposits; leaching from wood preservatives
<b>90th Percentile:</b> Out of every 10 homes, 9 were at or below this level.						
Turbidity Daily Compliance (NTU)	TT	Lowest Monthly % of Samples	Highest Detected Daily Value			
	1	100%	0.47	Soil runoff.		
Monthly Compliance*	at least 95%					

\* Monthly turbidity compliance is related to 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.

## WATER QUALITY SUMMARY – Public Water Supplier ID # 3031000

The following tables list all of the substances detected in drinking water through the 2009 calendar year. Each year the Water Division is required by Federal and State regulations to conduct extensive water quality testing on drinking water. After the tables you will find abbreviation definitions and notes

### Unregulated Substances

	SMCL	ORSG	Range Detected		Typical Source
			Lowest	Highest	
Sodium (ppm)		20	66	100	Natural sources; runoff from roadway salt; by-product of treatment process.
<p><i>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.</i></p>					
			Range Detected		
			Lowest	Highest	
Sulfate (ppm)	250			42	Natural sources
N - nitrosodi methylamine (ppm) NDMA		.0000028	.0000051		Discharge from industrial use; as a by-product of drinking watertreatment; produced from naturally occurring precursor chemicals.

### Unregulated Volatile Organics

	MCLG	Range Detected		Source(s) of Contaminant
		Lowest	Highest	
Chloroform (ppb)	0	5.3	21	By-product of drinking water chlorination.
Bromodichloromethane (ppb)	0	6.3	16	By-product of drinking water chlorination.
Chlorodibromomethane (ppb)	0	2.6	6.9	By-product of drinking water chlorination.

*EPA has not established drinking water standards for Unregulated Contaminants and as such they do not have a MCL. The purpose of Unregulated Contaminant monitoring is to assist the EPA in determining their occurrence in drinking water and whether future regulation is warranted.*

## Definitions and Notes

#### MCL = Maximum Contaminant Level.

MCLs are the highest level of a contaminant that is allowed in drinking water. MCL's are set as close to 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. MCLG's 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 disinfectant, below which there is no known or expected risk to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.

**TT = Treatment Technique.** A required process intended to reduce the level of a contaminant in drinking water.

#### 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.

**AL = Action Level.** The concentration of a contaminant, which if exceeded, triggers treatment or other requirements that a water system must follow.

**ppm = Parts per million.**

**ppb = Parts per billion.**

**ND = Not Detected**

**NTU = Nephelometric Turbidity Units.**

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# New Stormwater By-law: Keeping Pollution Out of the Storm Drain

## What's the difference between the sanitary sewer system and the storm sewer system?

The **sanitary sewer** system is a network of pipes that carries **wastewater** from the toilets, sinks, bathtubs/showers in your house to the treatment plant, where the wastewater is cleaned before entering the Concord River.

The storm sewer system, or more commonly known as the **storm drain**, is a network of roadside ditches, gutters, and underground pipes that collect **stormwater** (water from rain and melting snow that flows over the ground) and carry it away from our streets, parking lots, and yards. Water enters the storm drain system through catch basin grates and exits through outfalls.



*Stormwater enters the storm drain through this catch basin grate.*



*Stormwater leaves the storm drain through an outfall.*

## Where does water in the storm drain system go?

Stormwater carried by the storm drain system **directly enters water bodies throughout Town, including the Concord River, the Shawsheen River, Nuttings Lake, and Winning Pond.** Sometimes stormwater flows into wooded or wetland areas of Billerica.

Remember – stormwater is not treated at the wastewater treatment plant. Any pollution that is washed into the storm drain ends up in Billerica's lakes and streams!

## New By-law Governing Discharges to the Municipal Storm Drain in Billerica

In October of 2007, Billerica adopted a by-law which makes it illegal to put pollution such as pet waste, water from laundry, motor oil, antifreeze, other chemicals, paint, leaves, soapy water, and litter/trash into the storm drain or into waterbodies. This by-law helps the Town protect the health and safety of our residents, provide cleaner water for drinking and recreation, and preserve the aesthetic value of the community.

### **Most everyday activities are still allowed by the by-law.**

These activities include landscaping irrigation, lawn watering, individual residential car washing, and draining dechlorinated swimming pools. It is even alright for your sump pump to discharge uncontaminated groundwater to the storm drain (but not to the sanitary sewer).

**If you suspect someone is putting pollution into the storm drain system or into water bodies, call the Billerica Board of Health at 978-671-0931.**

# How “Green” Are Your Stormwater Habits?

Circle the answer that **best** describes your personal habits. If a question doesn't apply, answer what you would most likely do in that situation. Be true to yourself!



## A. Litter Habits:

- (1) I sometimes litter
- (2) I never litter and usually recycle
- (3) #2 above plus I have participated in a neighborhood, park or river cleanup



## B. Storm Drains:

- (1) I have put pet waste, trash, yard waste, oil, or paint down a storm drain
- (2) I never dispose of anything down a storm drain
- (3) #2 above plus I sweep leaves and debris AWAY from nearby storm drains



## C. After my lawn is mowed, the grass clippings are:

- (1) Collected and tossed onto the road-side, a stream bank, or vacant land
- (2) Collected and used as compost/mulch or disposed of as yard waste
- (3) Left in place on the lawn



## D. The following approach is used when fertilizing my lawn:

- (1) The more fertilizer, the better, and leave the overspread where it is
- (2) Follow the guidelines on the fertilizer bag, and sweep up overspread
- (3) Use fertilizer only as needed or not at all, and avoid overspread



## E. I manage steep slopes on my property by:

- (1) Ignoring any runoff that washes off and erodes the slope
- (2) Channeling rainwater away from the slope to where it can slowly seep into the ground
- (3) Maintaining native vegetation on the slope to stop erosion



## F. When walking my dog, I usually:

- (1) Leave the waste where it is or drop it down a storm drain
- (2) Move the waste to a less traveled location such as a field or woods
- (3) Pick up the waste and dispose of it down the toilet or in the trash



## G. Most of the rainwater running off my roof is directed to flow:

- (1) Down the driveway
- (2) Onto my lawn or garden(s)
- (3) Into a rain barrel



## H. I typically wash my car:

- (1) In my driveway where the wash water flows into the street
- (2) On my lawn where the wash water can seep into the soil
- (3) At a commercial carwash where the wash water is recycled and treated



## I. Car care:

- (1) I ignore fluid leaks from my car as long as possible
- (2) I check for fluid leaks and repair them promptly
- (3) #2 above plus I follow my car's complete maintenance schedule



## J. My driveway is made of:

- (1) Asphalt or a similar non-porous pavement
- (2) Sand or gravel
- (3) Porous or permeable pavement

*Add up your score using the number of your answer as its point value, and check your rating below!*

**1 - 10:** “Stormwater Starter” By greening up your stormwater habits, you will significantly help to improve the water quality in your community!

**11 - 20:** “Stormwater Smart” You're already helping to improve local water quality, but you can still do more!

**21 - 30:** “Stormwater Star” Congratulations on being a good stormwater citizen! Please keep up the good work, educate others, and strive for all 30 points!

*By **GREENING** our stormwater habits, we can keep our waterways **BLUE!***

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TOWN OF BILLERICA  
DEPARTMENT OF PUBLIC WORKS  
WATER DIVISION  
270 TREBLE COVE ROAD  
BILLERICA, MA 01862

POSTAL CUSTOMER

PRESORTED STD  
U.S. POSTAGE PAID  
N. BILLERICA, MA  
PERMIT NO. 74

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## Why Does The Water Division Send Out This Report Each Year?

Under the Federal Safe Drinking Water Act, we are required to compile our results of annual testing of the drinking water for our system. Within this report we have specific data that must be included regarding how Your water is treated, what contaminants could potentially be in the water, what contaminants were detected in the water and at what level. We are also required to publish health effects language for anything we have detected in the water that is above the Maximum Contaminant Level.

The State Department of Environmental Protection (DEP) is the permitting authority for the amount of water we can withdraw from the Concord River. This is done by a Water Withdrawal Permit, our permit is 9P-3-14-031.01. The DEP has set guidelines on per capita use of water at 65 gallons per person per day. Therefore it is necessary for us to educate our water customers and consumers on the importance of water conservation. Each year we include tips and how to-s for our consumers to save water inside and outside their homes and/or businesses.

As authorized by the Clean Water Act, the Environmental Protection Agency (EPA) has mandated that certain communities such as Billerica must file for a permit under the Phase II National

Pollutant Discharge Elimination System (NPDES) program. This permit controls water pollution by regulating point sources that discharge pollutants into water systems. As part of this permit, Billerica is required to create a Stormwater Management Plan that addresses public education and outreach, public involvement & participation, illicit discharge detection & elimination, construction site stormwater runoff control, post construction stormwater runoff control, and good housekeeping in municipal operations. We must protect our water source from pollution by managing the stormwater runoff that enters the river and it's watersheds. We hope that you find our stormwater education pages helpful and informative.

Massachusetts Department of Environmental Protection 310 CMR 22.22 regulates the Commonwealths Cross Connection Controls. Part of our Public Water System's responsibility is to educate our customers on what cross connection is and how to prevent cross connections. We hope you found our cross connection information helpful.

***“Water... without it we could not subsist. It is the very core of all Life. It is our responsibility to be the stewards of and to protect the future health and sustainability of this natural resource.*”**

