The Town of Tewksbury Consumer Confidence Report for 2008

One of the most notable projects in the water system has been the installation of new water meters.

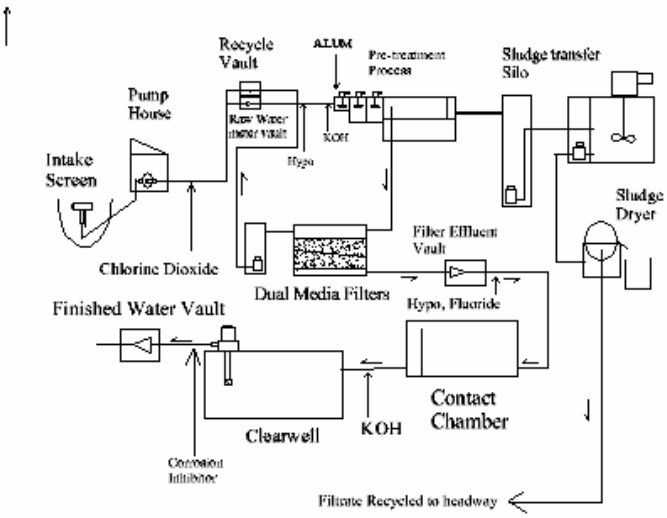
This four year program will result in every water meter being replaced with new meters attached to meter transmitting units (MTU). The MTU's will transmit meter readings every six hours to insure that at least one data transmission makes it through to the host server now located in the Town Hall annex. All of this data will enable the Town to better monitor the water system and allow for more frequent computerized billing. The new fixed network system can monitor itself for leak detection, malfunctioning or tampered devices, through what is called exception reports. Customers will be better served through real time data collection making complaints or assistance much easier for our staff.

Where does my water come from? How is it treated?

The Town of Tewksbury draws water from the Merrimack River. Typically over 1 billion gallons of water is used to satisfy the water demand in one year. This year due to the very wet weather only 925 Million gallons of water was used by the Town.

The treatment process uses a multiple barrier process. Raw water drawn from the Merrimack is subjected to various treatment processes that result in crystal clear water that is then distributed to the more than 10,000 water connections in town.

The sophisticated process is carefully controlled by in process testing every four hours and monitored by online instrumentation to insure that the facility is running well.



Why did the Town switch to Sodium Hydroxide?

Sodium Hydroxide

Sodium Hydroxide (aka Caustic Soda), has replaced Potassium Hydroxide due to unprecedented price escalation for obtaining this chemical. Potassium Hydroxide has gone up in price by almost 600 % and would have cost the town an additional $250,000 to treat the water. Many towns are facing this reality and have switched or are in the process of switching over. The Sodium content of the water was recently measured at 49 mg/L. Seasonable variations will change the total Sodium content greatly. As a comparison the FDA allows up to 5 mg per serving to be called "Sodium Free". The Sodium levels of our water would be classified as "very low sodium". Try this URL for information directly from the EPA: **www.epa.gov/safewater/contaminants/unregulated/sodium.html**

Reportable & Detectable Compounds in Your Water:

Compound	Highest Detected Value	Range	Average Detected Value	MCL/MRDL	MCLG/MRDG	Violation (Y/N)	Possible Cause
Perchlorate	None	None	None	2	0	N	Oxygen additive for solid fuel propellant for rockets
Fluoride (PPM)	1.10	NA	1.10	4	4	N	Erosion of natural deposits, water additive to promote strong teeth, discharge from fertilizer and aluminum factories
Sodium (PPM)	49	40-50	40	N/A	N/A	N	Natural Sources, runoff from use a salt on roadways
Nitrate (PPM)	0.30	NA	0.30	10	10	N	Run off from fertilizer use; Leaching from septic tanks, sewerage, Erosion of natural deposits
Turbidity (NTU)	0.06	0.03-0.06	0.04	0.30	<5% over 0.3 NTU	N	Soil Runoff
Sulfates (PPM)	22.0	NA	22.0	NA	NA	N	Soil Runoff & household detergents
TTHM (PPB)	140	37-140	83	80 ARA	0	Y	By-Product of Drinking water process.
HAA5 (PPB)	32	11-32	20	60 ARA	0	N	By-Product of Drinking water process.
VOC (PPB)	None	None	None	Varies	0	N	Discharge from Chemical factories
Chlorite (PPM)	0.26	0.04-0.26	0.10	1.0	NA	N	Disinfection By-product
Total Coliform	None	None	None	0	0	N	Naturally present in environment
Sampled: 7/08	90th Percentile	# of sites exceeded	# sites sampled	Action Level	MCLG	Violation	
Lead (PPM)	0.002	0	30	0.015	0	N	Corrosion of household plumbing
Copper (PPM)	0.07	0	30	1.3	0	N	Corrosion of household plumbing

Important Definitions

1. **Maximum Contaminant Level (MCL)** – the highest level of a contaminant that is allowed in drinking water.
2. **Maximum Contaminant Level Goal (MCLG)** – the level of a contaminant in drinking water below which there is no known or expected risk to health.
3. **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.
4. **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.
5. **Treatment Technique (TT)** – A required process intended to reduce the level of a contaminant in drinking water.
6. **Action Level (AL)** – The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
7. **PPB –** Parts per billion or micrograms per liter (µg/L).
8. **PPM –** Parts per million or milligrams per liter (mg/L).
9. **ARA –** Annual Running Average.

Contaminate Information

The information below is mandated by the EPA and contains educational information as to where some contaminants found in our environment may originate from. On the previous page all of the detected compounds have been listed. Also included are some non-detectable compounds, due to public interest in knowing the results of our testing. During the year over 34,675 in process tests are performed by our operators. Many additional tests are performed by our chemist or sent out for analysis by private laboratories. The long list of compounds is well over 250 chemicals all of which are either non-detectable or well below reporting limits. Our on-line equipment generate over 250,000 data points all of which are reduced to monthly reports and sent to DEP for compliance with the drinking water regulations. Several new prototype testing programs are in full swing where microbial, parasitic and disinfection by-product tests are performed for future regulations.

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 storm-water 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 storm-water 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 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.

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's Safe Drinking Water Hotline at 800.426.4791.

Important Information

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 at 800.426.4791.

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.

THM: Some people who drink water containing trihalomethanes in excess of the MCL over many years experience problems with their liver, kidneys, or central nervous systems, and may have increased risk of getting cancer.

Turbidity: Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease causing organisms. These organisms include bacteria, viruses and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches.

Total Trihalomethane (TTHM) Violation

TTHM's are simple compounds that are formed when bleach, used in the treatment process, react with organic compounds called precursors and form a group of compounds called Trihalomethanes. All water sources using bleach and water from a natural source such as the Merrimack River will produce some level of TTHMs. EPA & MADEP have instituted a limit based on a running average of 80 PPB. In 2008 two particular quarters produced high TTHM values which put the compliance average just over the 80 PPB annual running average limit. On January 1st , 2009 the running average of our water system calculated out to 83 PPB. This does not mean that the water is unsafe to drink. The water is safe to drink and this strict limit is there to insure that the water is safe to drink for years to come. Notices as required by EPA/MADEP regulations were sent out to inform you as a water consumer as to what is happening in your water supply.

What are we doing?

The treatment process has been changed to improve removal of the precursors that ultimately form THM's. Chlorine Dioxide, a powerful oxidant/disinfectant has been increased to destroy precursors. Chlorine levels in the pre-treatment and the water distribution system have been lowered to discourage THM formation. A new Powered Activated Carbon process is being added to also assist in the reduction of THM's and absorption of chlorine in the process. An engineering firm is performing a comprehensive study of the disinfection process to insure that all avenues to reduce the THM's using the current process have been investigated.

Notice of Non-Compliance

In accordance to M.G.L. c 111 sec. 159-160 and CMR 310 22.00

Our water system failed to collect samples in accordance to the scheduled developed for the Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR). Samples for this monitoring program are allotted only a two day collection window in order to stay within compliance. The samples were scheduled to be collected 9/21/08 to 9/25/08 but were actually collected on 9/28/08 and were submitted for analysis. MADEP has accepted the results of this testing even though they were collected outside the collection window. This is considered a Tier 3 reporting violation and this public notice serves to complete the requirements of MADEP in regard to the notice of non-compliance issued on January 16th 2009.

Deduct Metering

The Town has authorized the use of deduct or irrigation meters. These are meters used to determine the amount of water that does not get discharged to the sewer system. This will enable water users to save some of the sewer charge base on the metering of this "irrigation" water. Water users can obtain applications and informational pamphlets in the Community Development office at the DPW at 999 Whipple Road.

Conservation

Water conservation can be accomplished in many ways. Prudent use of irrigation systems, sweeping a driveway instead of washing it down, install conservation devices in your home or business, shorter showers instead of a bath. In Tewksbury, if all of the residents were to conserve 1% of water use, that would add up to about 6.5 million gallons. *Please help to conserve water!*

Backflow Prevention Program

The Town of Tewksbury Water Department continues to administer the state mandated cross connection program. A cross connection is a connection between the public water supply and any non-potable water (unfit to drink) source. All cross connections need to be protected by installation of a device called a backflow preventer. This device stops water from flowing backwards from a potentially contaminated source back into the public water supply. Backflow can occur when pressure in the town water system drops to unusually low levels such as during a fire or a water main break.
As part of the cross connection program all water services to industrial, commercial, institutional and municipal facilities must be protected by a backflow preventer.
There are three different types of backflow preventers that are usually used in town, all of which require testing on a regular basis. The Town of Tewksbury employs a state certified Cross Connection Surveyor/Tester that does this testing. The Surveyor/Tester is also responsible for surveying facilities to make sure all cross connections within those facilities are protected.

The types of backflow preventers are:

Reduced Pressure Zone (RPZ): for maximum protection of high hazard locations, such as in chemical applications
Double Check Valves (DCV): for low hazard locations, such as fire sprinkler systems with no chemical additives
Pressure Vacuum Breakers (PVB): for low hazard locations, usually used on irrigation system

Residential water users should be aware of potential cross connections around the house, such as hoses in utility sinks, outside irrigation systems and hoses left in swimming pools.
Several backflow prevention devices are available to the home owner, vacuum breakers for utility sinks and irrigation systems and hose bibs for faucets. Residential property owners that have fire sprinkler systems that contain anti-freeze should have their backflow preventer tested on a regular basis by a certified tester.

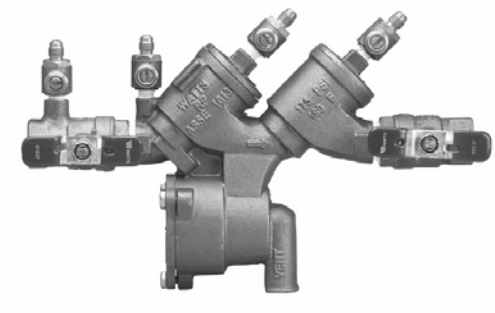
Please Notice:

All Industrial & Commercial properties that maintain backflow devices are required by Mass General Laws to maintain a repair kit for all backflow devise on the premises at all times in case of a failure.

Three Common backflow devices:

Pressure Vacuum

Reduced Pressure Zone



Double Check Valve Assembly

2008 Consumer Confidence Report

CAR.-RT.
PRESORT
BULK RATE
U.S. POSTAGE
PAID
Tewksbury, MA
PERMIT No. 33

Resident
Postal Patron
Rural Route Patron

Town of Tewksbury Water Department **PWSID# 3295000**
Water Billing: (978) 640-4350 Water Plant: (978) 858-0345
Water / Sewer Division: (978) 640-4440 ext. 5
Contact Names:
Lewis Zediana (Water Plant)
George DeRoche (Water Distribution)

A message from the DPW Superintendent:

The Water Department staff has worked hard to deliver quality water during the year of 2008. This effort continues in the form of modernization of the water system equipment, pipes and treatment facilities. We have recently seen the addition of a new water storage facility (Colonial Drive), upgrading of water pipes through the Sewer program, hundreds of new fire hydrants to replace broken and old units and finally repair and maintenance on the water system's oldest storage tanks on Ames Hill. Through the hard work and efforts of the water and DPW staff, our water system will continue to supply clean drinking water in suitable quantities for the publics use. Thank you for your ongoing support.

Brian Gilbert.