COMMONWEALTH OF MASSACHUSETTS

TOWN OF SOUTHWICK

SOUTHWICK WATER DEPARTMENT

WATER QUALITY REPORT

PWS 1279000

2009

The Southwick Water Department provides you, our customers, with pure, safe, sparkling and taste-free drinking water. The Water Department employees and the Water Commissioners are committed to working diligently to provide this same level of service, and to provide for the future growth of the Town by maintaining, repairing, and increasing the capacity of the water system.

Due to the events that took place on 9/11/2001, care must be taken on how much detail is published in this report. All Public Water Systems have been advised to increase security since all are susceptible to the acts of others. A vulnerability assessment study has been completed by the National Rural Water Associations Security and Emergency Management System. This study is a requirement of the federal enacted Safe Drinking Water Act. The contents of that report are confidential for security reasons.

Diligent efforts to protect this system will continue to make it our legacy to our children.

Water Source:

Our water comes from these three sources:

1.) Town Well #1, which is located along the Great Brook Aquifer.
2.) Town Well #2, which is located along Great Brook Aquifer.
The combination of flows from the two wells provides 95% of the water needs of the Town.
Southwick is very fortunate to have one of the most pristine and productive water supply aquifers in this part of the country.
3.) Two (2) connections to the Springfield Water System Aqueduct and associated booster pumps are used to supplement the Town's water system needs during heavy use periods, and to act as a backup supply in an emergency situation.

The Department of Environmental Protection (MassDEP) completed a Source Water Assessment and Protection (SWAP) Program report in April 2003. The report lists potential contamination sources, and a summary of our system's susceptibility to these contaminant sources. The report may be reviewed and a copy obtained at the Town of Southwick Department of Public Works at 454 College Highway Southwick, MA. The MassDEP also performed a Sanitary Survey of the water system and maintenance plans during the month of July 2009. The inspections are conducted every three years and include a complete review of our maintenance plans, testing schedules, system cleanliness, back flow prevention and cross connection prevention programs. In general the results of the inspection, and actions taken are listed below:

- The Southwick Water Department failed to conduct cross connection surveys at the bacteria testing locations prior to May 30, 2009. The testing locations where subsequently surveyed a short time after May 30, 2009 and found to be free of any cross connections.
- Mass DEP required The Southwick Water Department to develop and submit an updated, comprehensive emergency response plan in compliance with 310 CMR 22.04(13 before December 31, 2009. The Southwick Water Department subsequently created the emergency response plan in December of 2009.
- Mass DEP recommends that the Southwick Water Department satisfy the residential education component requirement of the cross connection regulations at 310 CMR 22.22(3)(f) by publishing the availability of the Source Water Assessment report created by Mass DEP in the Consumer Confidence Report. The notification is the assessment report availability is listed previously in this report.
- Mass DEP recommends that the Southwick Water Department create and maintain a formal written maintenance plan. The Southwick water Department has subsequently written a maintenance plan.
- MassDEP requires that the Southwick Water Department obtain a permit for a distribution system modification (BRP WS 32) for any changes in the capacity of a booster pump station. This permit will be obtained during the design and permitting phase of the upgrade of the water booster pump stations on Granville Rd, and Coes Hill Rd. currently in progress.

- Mass DEP requires that the Southwick Water Department repaint/recoat the existing water storage tank by July 31, 2011. After a planned new water storage tank is constructed and activated, the existing tank will be refurbished including repainting.
- Mass DEP requires tha the Southwick Water Department keep the area around the water storage tank clear of vegetation before July 31, 2009. This requirement was complied with on July 22, 2009.

Distribution System:

After the water enters the system, from either source, it is pumped up into the storage tank, which also serves as the pressure regulator for the water system. At the same time, the tank also acts as a reservoir of stored water, which can be used for fire fighting or any other emergency.

From the tank, the water enters the distribution system and branches out through a system of approximately 50 miles of pipes, eventually connecting to your faucets. During the past several years, Water Division efforts have concentrated on upgrading the distribution system and many significant improvements have been made. More and more demands are being put on the water system due to the increase in housing development. In order to keep up with this added demand for drinking water and fire fighting capabilities, lines that were adequate in size 5 or 10 years ago need to be replaced with larger sized lines. During 2006 Tighe & Bond Engineers from Westfield conducted hydraulic testing, and a computer model of the system was. Recommendations were made to add a redundant well with a larger pump and motor and a second million-gallon storage tank to increase our storage capacity to a 3-day supply. Town voters approved the requested funding for permitting and installation of the new well. The new well and pumping house are now complete and operating.

Construction of the new 1.0 million gallon storage tank will begin during the summer of 2010, and is expected to be completed by the end of 2010.

The system improvements c will allow Southwick to utilize the approved MassDEP withdrawal volumes. Southwick has a pumping capacity of just over 1 million gallons per day. Southwick currently uses approximately 800,000 gallons per day. This will Southwick to use less of Springfield's chlorinated water source reducing the taste and /odor associated with the chlorinated water source. These improvements will provide for long term increases in demands on the system.

How do we ensure Water Quality?

Southwick Water Department water is tested at a certified independent laboratory and the results of these tests are compared to USEPA and MassDEP standards for safe drinking water. These tests are scheduled by MassDEP and performed throughout the year. Specific tests are performed for bacteria, volatile organic compounds, synthetic organic compounds, inorganic compounds, lead, copper, and disinfection byproducts. Approximately 400 of these tests are taken each year to insure the safety and quality of our drinking water. The test results are available for review at the DPW office at Southwick Town Hall.

The Town is required to test for lead or copper every three years. There has been no lead or copper problems in past years that constitute above average levels of either metal.

The water system is required to test for Halocetic Acids and Trihalomethanes. These compounds in the water are as a result from the chlorinated water we receive from Springfield, MA. We currently are required to test for levels of these compounds every three months in 2009 and 2010. Our running annual average for halocetic acids was 8.1 ug/l and therefore is well below the MassDEP violation reporting limit of 60 ug/l. Our running annual average for trihalomethanes based on the four quarter average testing result is 20.49 ug/l. This is below the MassDEP violation reporting limit of 80 ug/l.

Health Information:
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 human activity. Contaminants that may be present in water sources include the following.

- 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, and farming.
- Pesticides and herbicides may come from a variety of sources such as agriculture, urban storm water run off, and residential run off.
- Organic chemical contaminants including synthetic and volatile chemicals which are by-products of industrial processes and petroleum production and can also come from gas stations, urban storm water run off, 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 MassDEP and US 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 or public health. Drinking water, including bottled water, may reasonably be expected to contain at least a small amount of contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. However, some people may be more vulnerable to contaminants in drinking water than others in 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).

Appendix A - Level of Detected Contaminants

Definitions:

Before you can interpret the water test results, you need to understand the following definitions and acronyms.

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

MCL (Maximum Contaminant Level) is the highest level of a contaminant that is allowed in safe drinking water.
ORSG MassDEP Guidance Level
SMCL Secondary Maximum Contaminant Level

AL (Action Level) is the concentration of a contaminant, which if exceeded, triggers treatment or other water system requirements.

PPM (Parts Per Million) measured in milliliters / liter (ml/l) -- (1 drop in 10 gallons)

PPB (Parts Per Billion) measured in microliters / liter (μl/l) -- (1 drop in 10,000 gallons)

TOWN WELL WATER TEST RESULTS

Contaminant (units)	MCLG	MCL	Maximum amount detected	Possible sources of Contaminants	Violation (Yes/No)	Number of Sites Sampled	Number of Sites found above Action Level
Barium (ppm) 2009	2000	2	.24	Erosion of natural deposits	No	1	0
Perchlorate (ppb) 2009	2	2	.64	By-product from the manufacture of rocket fuel fireworks and explosives.	No	1	0
Sulfate (ppm) 2008	Not regulated	Not regulated	14.0	Erosion of natural deposits	No	1	0
Nitrate (ppm) 2009	10	10	3.8	Runoff from fertilizer use, Leaching from Septic Tanks or Erosion of natural deposits.	No	1	0

Water Sodium and Sulfate Test Results

Contaminant Units	SMCL	ORSG	Maximum amount detected	Possible Source of Contamination	Violation yes/no	Number of sites sampled	Number of sites above the MassDEP guidance levels
Sodium	None	20	12	Naturally Occurring mineral deposits	No	1	0
Sulfate	250	None	14	Naturally Occurring Mineral deposits	No	1	0

Delivered Water Lead and Copper 2008 test results

Contaminant Units	Action Level MGL	MGL Average Result	90th Percentile Level	Possible Source of Contamination	Violation YES/NO)	Number of Sites Samples taken	Number of Sites found above action Level
Lead (ppb)	15	2	5	Corrosion of household plumbing	No	20	0
Copper	1.3	.054	.09	Corrosion of household plumbing	No	20	0

Delivered Water Lead and Copper 2009 test results at the Middle School and High School

High School

Contaminant Units	Action Level MGL	MGL Average Result	90th Percentile Level	Possible Source of Contamination	Violation (YES/NO)	Number of Sites Samples Taken	Number of Sites found above action Level
Lead (ppb)	15	1.0 and 6.3	n/a	Corrosion of Plumbing	No	2	0
Copper (ppm)	1.3	.21 and .12	n/a	Corrosion of Plumbing	No	2	0

Middle School

Contaminant (Units)	Action Level MGL	MGL Average Result	90th Percentile Level	Possible source of Contamination	Violation (Yes/No)	Number of Sites Samples taken	Number of Sites found above Action Level
Lead (ppb)	15	1.1 and 1.4	n/a	Corrosion of plumbing	No	2	0
Copper (ppm)	1.3	.061 and .078	n/a	Corrosion of plumbing	No	2	0

Appendix B – Health Information

Biological Contaminants:

(1) Total Coliform:

Coliforms are bacteria which are naturally present in the environment and are used as an indicator that other, potentially harmful bacteria may be present. People with severely compromised immune systems, infants, and some elderly may be at increased risk. These people should seek advice about drinking water from their health care providers. General guidelines on ways to lessen the risk of infection by microbes are available from EPA's Safe Drinking Water Hotline at 1-800-426-4791

(2) Fecal Coliform/E.Coli:

Fecal Coliform and E. Coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Germs in these wastes can cause diarrhea, cramps, nausea, headaches and fatigue. No fecal Coliform or E. Coli bacteria were found in any of the monthly samples taken at numerous sites within the system.

Organic Chemicals

(1) 1,2 Dichloropropane:

Some people who drink water containing 1,2 Dichloropropane in excess of the MCL over many years may have an increased risk of getting cancer. This organic chemical has not been detected. The Water Division is also working with the people who may have used this chemical in the past in order to determine if we can isolate the original source. There is no present danger, but we want to avoid any potential problems. Routine monitoring continues on this chemical..

Inorganic Chemicals

(1) Barium:

Some people, who drink water that contains barium in excess of the MCL over many years, could experience an increase in their blood pressure. We have discovered that our water contains barium at 240 PPB, which is far below the MCL of 2000 PPB. Barium in the drinking water comes from natural deposits.

(2) Sodium

All groundwater contains a small amount of sodium, which comes from the erosion of natural deposits and road salt. Persons on a sodium-restricted diet may want to consult their health care provider even though this is a very small amount (12.00 PPM).

(3) Sulfate

This compound comes from erosion of natural deposits and is not regulated by USEPA or the MassDEP.

(4) Nitrate

Nitrates occur in drinking water from runoff from fertilize, animal waste, leaching from septic systems. At 3.40 PPM, the amount of this compound in our water is below the MCL of 10 PPM and decreasing with time. The current sanitary sewer installation project should further help to reduce this number.

(5)Berylium

Berylium is an inorganic compound that occurs naturally and enters the water system as a result of natural or human activities. In 2009 the new well #2 was tested for berylium and none was detected. The EPA has determined that berylium is a natural carcinogen.

(6) Perchlorate

The salts of perchloric acid are inorganic chemicals used in the production of rocket fuel, explosives, and fire works. Human exposure to perchlorate can occur if contaminated water is consumed. Perchlorate disrupts normal function of the thyroid gland in humans. Southwick water perchlorate level has beem measured at .64 ppb well below the maximum contaminate level of 2 ppb allowed by MassDEP.

(7) Lead and Copper

In 2009 Lead and Copper samples were taken at the Middle School and High School and were found to be below the MassDEP maximum contaminant levels that would trigger corrective action.

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. The Southwick Water Department 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 two 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 Hot Line or at http://www.epa.gov/safewater/lead.

Note:

One of the potential causes for chemicals in groundwater comes from the use of fertilizers and pesticides on lawns and gardens. NEVER use more than the manufacturers recommended amounts of either.

The water is tested for hardness and pH to determine if any treatment is necessary. The measured pH (how acidic or basic) of 7.5, shows that our water is non-aggressive. The aggressiveness of water determines the potential for the presence of lead or copper since acidic (pH of less than 6.7) water leads to the dissolving of lead and copper from our plumbing systems. Our lead and copper testing also indicates that this pH 7.5 has not been attacking the pipes in our system or in your homes since the readings for lead and copper are at a very low level.

Our test for hardness shows that our water is typical of well water. It has a hardness level higher than the typically soft water from a surface water source.

Water Commissioners Meetings

The Southwick Water Commissioners meet on alternating Thursday evenings during the year. The meetings are held on the first and third Thursday of each month. During the months of July and August the commissioners are in their Summer schedule and meet only on the first Thursday of each month.

The meetings are held at 454 College Highway Southwick, Ma in the upper level conference room. The meetings are public and open for participation by all Town residents. Meeting notices are posted at town Hall 48 hours prior to each meeting.

MassDEP Enforcement Violations 2009

Changes to our routine monthly sample collection schedule for total coliform bacteria were discussed with the Massachusetts Department of Environmental Protection (MassDEP). Under the revised schedule the number of routine sample collection sites would be increased from eight to ten locations. The Southwick Water Department did not begin collecting samples from the ten locations until August 2009. We disagree that we were required to collect ten samples for the month of July and therefore violated the total coliform monitoring requirements. Since August 2009 all samples have been collected as per the revised schedule as required.

Between the months of July and September of 2008 the Southwick Water Department was required to test the water at two different schools for levels of lead and copper, however, samples were collected at only one of the schools. The 2008 Consumer Confidence report listed monitoring violations but omitted the required language that appears in the first italicized paragraph. A public notification was issued by the water department including the required language and the problem was resolved.

During the month of October 2009 11 of the 36 water samples taken for the detection of coliform bacteria tested positive for the bacteria. Both groundwater wells that serve the water system were shut down and the connection to the Springfield Water System was turned on in order bring chlorinated water into the system to disinfect the water lines. The distribution system lines were flushed to mobilize the chlorinated water. Water samples were taken at both groundwater wells that tested negative for coliform and Ecoli bacteria. Subsequent sampling after disinfection showed that there was no coliform bacteria in the system, and that the problem was solved.

In November 2009 three out of the twenty seven water samples collected tested positive for total coliform bacteria however all repeat samples collected tested negative for bacteria and the problem was resolved.

On April 1, 2009 a Unilateral Administrative Order was issued by the DEP requiring the following

- Submit a formal hydrant flushing program. This was completed.
- Submit results of our cross connection survey at each of our bacteria testing sites. This was completed
- Conduct a complete flushing of the distribution system. This was completed.

On September 21, 2009 an Administrative Consent Order was issued by the DEP requiring that the Southwick Water Department submit a copy of our standard operating procedure for assuring compliance with the Total Coliform Rule. This was completed.

In 2009 water system received a notice of non compliance for violations of the cross connection regulations and for not submitting the Interim Distribution System Evaluation results in a timely manner.

Where can you get more information?

More information can be obtained from the following sources:

1.) Visit the Web Site for the American Water Works Assn. @ www.awwa.org

2.) Visit the Web Site for the U.S. Environmental Protection Agency @ www.epa.gov/OW/

3.) Visit the Web Site for the MassDEP @ www.state.ma.us/dep/

4.) Call the Water Division between 8:30 AM & 4:30 PM, Monday through Friday

Phone: (413) 569-6772
Fax: (413) 569-5001