

COMMONWEALTH OF MASSACHUSETTS

TOWN OF SOUTHWICK

SOUTHWICK WATER DEPARTMENT

WATER QUALITY REPORT

PWS 1279000

2010

The Southwick Water Department provides you 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.

For security reasons 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 acts of vandalism by 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.

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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 provided 83% of the water needs of the Town. Southwick in 2010. 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.

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 has begun. Construction of the tank is scheduled to be complete by the end of the summer of 2011. The tank will then be sanitized and filled in preparation for it's being on line and functional by September of the year 2011.

Also this year the pressure booster pump stations at Coes Hill Road and Granville Road will be removed and replaced so that water pressure on those two roads will become higher and more reliable. After the two booster pumps are constructed, the existing well pump will be taken off line and rebuilt, and the existing tank will be drained, repaired, and painted.

The system improvements discussed above will allow Southwick to utilize the approved Mass DEP 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 allow 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 by a certified independent laboratory and the results of these tests are compared to USEPA and Mass DEP standards for safe drinking water. These tests are scheduled by Mass DEP 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 Water Department is required to test for lead or copper every three years. We are scheduled to take samples, test the water and report the results during the third quarter of 2011. There was no lead and copper tests required or taken in the year 2010. 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 were required to test for levels of these compounds every three months in 2010. Our running annual average for halocetic acids in 2010 was 5.36 ug/l and therefore is well below the Mass DEP violation reporting limit of 60 ug/l. Our running annual average for trihalomethanes based on the four quarter average testing result is 10.80 ug/l. This is below the Mass DEP 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 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 Mass DEP 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)	<u>MCLG</u>	<u>MCL</u>	Maximum amount detected	Possible sources of Contaminants	Violation (Yes/No)	Number of Sites Sampled	Number of Sites found
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above Action
Level

Barium (ppm) 2009	2000	2	.24	Erosion of natural deposits	No	1	0
Perchlorate (ppb) 2010	2	2	.842	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) 2010	10	10	3.8mg/l	Runoff from fertilizer use, Leaching from Septic Tanks or Erosion of natural deposits.	No	2	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	90 th 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

Contaminant Units	Action Level MGL	MGL Average Result	90 th 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	<u>MGL Average Result</u>	<u>90th Percentile Level</u>	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) Beryllium

Beryllium 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 beryllium and none was detected. The EPA has determined that beryllium 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 may disrupt normal function of the thyroid gland in humans. Southwick water perchlorate level has been 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 2010

The Southwick Water Department failed to monitor for halocetic acids and nitrate from an approved sample location during the fourth quarter of 2010 in violation of Massachusetts Drinking Water Regulations 310 CMR22.07 E(7)(b)

We are required to monitor our drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During the period from October 1 through December 31, 2010, we did not monitor or test for nitrate or halocetic acids and therefore cannot be sure of the quality of our drinking water during that time. Subsequently we collected samples for nitrate analysis on January 24, 2011, and the results were 3.8 MCL. These results indicate that we were meeting nitrate drinking water standards in January of 2011. During the fourth quarter 2011 a sample will be collected for halocetic acid analysis and additional samples will be collected for nitrate analysis. We will keep you informed if these samples

indicate that we are not meeting drinking water standards or there are any additional concerns regarding our drinking water.

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