

South Haven

Water System



2014

Drinking Water Quality Report

Includes PWS ID #'s 6100, 6103, 1661



Is my water safe?

We are pleased to present this year's Annual Water Quality Report (Consumer Confidence Report) as required by the Safe Drinking Water Act (SDWA). This report is designed to provide information about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. This report is a snapshot of water quality and analysis conducted in 2014. We are committed to providing you with this information because informed customers are our best allies.



Source water assessment and its availability

A source water assessment was conducted by the United States Geological Survey and the Michigan Department of Environmental Quality in 2003. The report concluded that our source has a moderately-high susceptibility to contamination. This report is not an indication of the water quality, but only a survey of conditions in and around our watershed that have the potential to pollute. The full report is available upon request.

Do I need to take special precautions?

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons, such as persons with cancer undergoing chemo therapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk for infections. These people should seek advice about drinking water from their health care providers. EPA/Centers for Disease Control (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 at (800) 426-4791.

Where does my water come from?

Source water for the South Haven Water Filtration Plant is provided by Lake Michigan. Water is fed to the plant through a 24-inch diameter intake pipe, connected to a partially submerged steel intake structure located approximately one mile off shore.

Why are there contaminants in my drinking water?



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. 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: microbial contaminants, such as viruses and bacteria, that may come from

sewage treatment plants, septic systems, agricultural livestock operations, and wildlife; inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban stormwater 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 agriculture, urban stormwater 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 stormwater runoff, and septic systems; and 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, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's (EPA) Safe Drinking Water Hotline (800-426-4791).

Additional Information for Lead

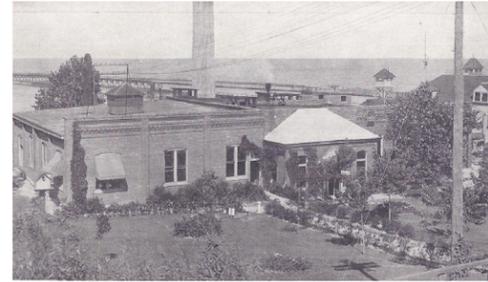
If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. South Haven is responsible for providing high quality drinking water, 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>.

Disinfectant Byproducts

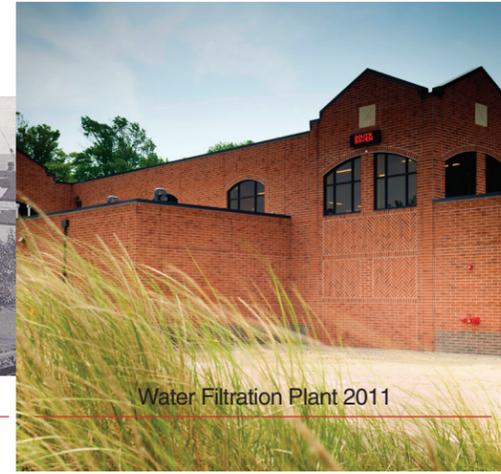
Disinfectant byproducts (DBP's) are formed when disinfectants used in water treatment plants react with natural organic matter present in the source water. DBP's for which regulations have been established have been identified in drinking water and include total trihalomethanes (TTHM) and haloacetic acids (HAA5). Our system samples for these byproducts in several locations at regular intervals. Compliance with the MCL is based on running annual averages of all sampling sites.

How can I get involved?

The City of South Haven is committed to educating our customers on the processes that bring safe, clean drinking water to their taps. The South Haven Board of Public Utilities meets the last Monday of every month at 4:00 pm in the Department of Public Works Conference Room, located at 1199 8th Avenue in South Haven. General questions about your water service and other utilities can be directed to the Department of Public Works at (269) 637-0737. For specific questions about this report, the treatment process, or to arrange a tour for your classroom or group, please contact Bob Miller, Plant Superintendent, at (269) 637-0715.



Water Filtration Plant 1916



Water Filtration Plant 2011



Water Filtration Plant 1970

Water Conservation Tips

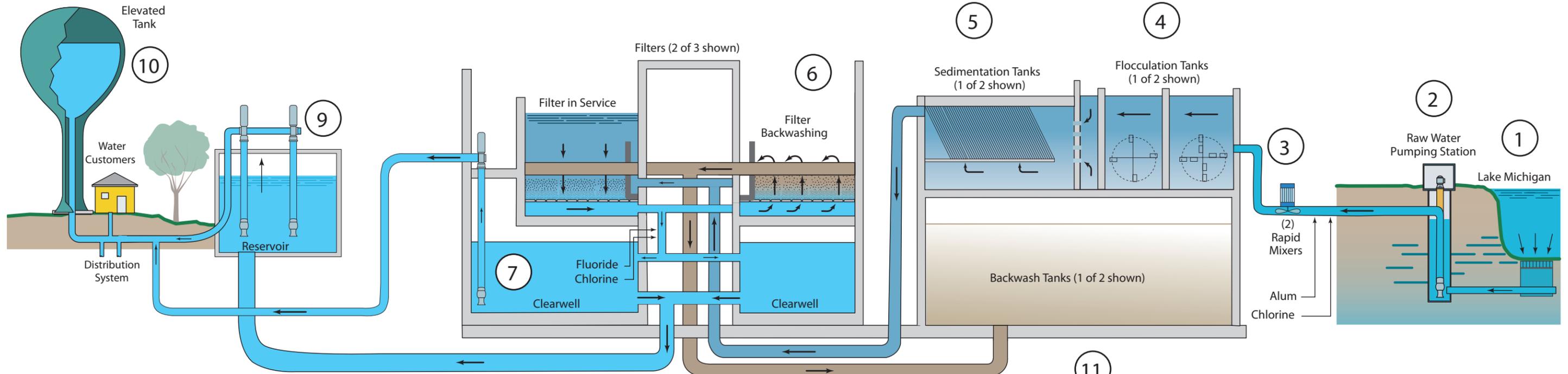
Did you know that the average U.S. household uses approximately 400 gallons of water per day or 100 gallons per person per day? Luckily, there are many low-cost and no-cost ways to conserve water. Small changes can make a big difference – try one today and soon it will become second nature.

- ▶ Take short showers - a 5 minute shower uses 4 to 5 gallons of water compared to up to 50 gallons for a bath.
- ▶ Shut off water while brushing your teeth, washing your hair and shaving and save up to 500 gallons a month.

- ▶ Use a water-efficient showerhead. They're inexpensive, easy to install, and can save you up to 750 gallons a month.
- ▶ Run your clothes washer and dishwasher only when they are full. You can save up to 1,000 gallons a month.
- ▶ Water plants only when necessary.

- ▶ Fix leaky toilets and faucets. Faucet washers are inexpensive and take only a few minutes to replace. To check your toilet for a leak, place a few drops of food coloring in the tank and wait. If it seeps into the toilet bowl without flushing, you have a leak. Fixing it or replacing it with a new, more efficient model can save up to 1,000 gallons a month.
- ▶ Adjust sprinklers so only your lawn is watered. Apply water only as fast as the soil can absorb it and during the cooler parts of the day to reduce evaporation.
- ▶ Teach your kids about water conservation to ensure a future generation that uses water wisely. Make it a family effort to reduce next month's water bill!

- ▶ Visit www.epa.gov/watersense for more information.



- 1 Raw water is drawn through steel cribs in Lake Michigan.
- 2 The raw water pump station houses three pumps which transfer the raw water to the water treatment plant.
- 3 The in-line rapid mixers quickly and uniformly mix treatment chemicals into the raw water.

- 4 The flocculation tanks increase the size of the destabilized particles in the water. The particles stick together and form larger particles called floc which can be settled out of the water.
- 5 The plate settlers remove large particles. The stainless steel plates improve the efficiency of the gravity process by providing more surface

- 6 area for particles to settle on.
- 7 The filter media consists of 15 inches of sand and 15 inches of anthracite coal. The water is filtered to remove solid particles remaining after the sedimentation tanks.
- 8 Just before leaving the plant, small amounts of fluoride for dental protection and sodium

- 9 hypochlorite (chlorine) for disinfection are added to the filtered water.
- 10 Treated water is stored in the plant in two clearwell tanks which are connected to the finished water reservoir on site. The clearwells are equipped with high service pumps providing water to the distribution system and

- backwash pumps for cleaning filters.
- 11 The reservoir provides contact time for disinfection and also provides storage to help manage water production needs.
- 12 The distribution system storage tanks provide stable system pressure and storage for fire protection and other emergencies.

- 13 The filter backwash wastewater is collected in holding tanks located under the flocculation/sedimentation tanks. The cleanest portion of the filter wash water, called filter-to-waste, is routed to a recycle tank and can be sent to the head of the plant for retreatment and reuse.

Water Quality Data Table

The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. As such, some of our data, though representative,

may be more than one year old. In this table you will find terms and abbreviations that might not be familiar to you. To help you better understand these terms, we have provided the definitions below the table.

Contaminants	MCLG or MRDLG	MCL, TT, or MRDL	Your Water	Range		Sample Date	Violation	Typical Source
				Low	High			
Disinfectants & Disinfectant By-Products								
(There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants)								
Chlorine (as Cl ₂) (ppm)	4	4	1.1	0.2	2.7	2014	No	Water additive used to control microbes
Total Organic Carbon	NA	TT	NA	NA	NA	2014	No	Naturally present in the environment
TTHM Covert Twp (ppb)	NA	80	63	41	93	2014	No	By-product of drinking water disinfection
TTHM South Haven (ppb)	NA	80	40	35	50	2014	No	By-product of drinking water disinfection
TTHM SH/Casco Authority (ppb)	NA	80	54	46	71	2014	No	By product of drinking water disinfection
HAA5 Covert Twp (ppb)	NA	60	29	10	46	2014	No	By product of drinking water disinfection
HAA5 South Haven (ppb)	NA	60	31	27	34	2014	No	By product of drinking water disinfection
HAA5 SH/Casco Authority (ppb)	NA	60	32	24	38	2014	No	By product of drinking water disinfection
Inorganic Contaminants								
Fluoride (ppm)	4	4	0.7	0.3	1.0	2014	No	Erosion of natural deposits; Water additive which promotes strong teeth
Sodium (optional) (ppm)	NA	NA	11	NA	NA	2014	No	Erosion of natural deposits; Leaching
Nitrate [measured as Nitrogen] (ppm)	10	10	0.5	NA	NA	2014	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Microbiological Contaminants								
Turbidity (NTU)	NA	0.3	100	NA	NA	2014	No	Soil runoff
100% of the samples were below the TT value of 0.3. A value less than 95% constitutes a TT violation. The highest single measurement was 0.09. Any measurement in excess of 1 is a violation unless otherwise approved.								
Total Coliform (positive samples/month)	0	1	0	NA	NA	2014	No	Naturally present in the environment
Radioactive Contaminants								
Radium (combined 226/228) (pCi/L)	0	5	0.1	NA	NA	2013	No	Erosion of natural deposits
Contaminants	MCLG	AL	Your Water	Sample Date	# Samples Exceeding AL	Exceeds AL	Typical Source	
Inorganic Contaminants								
Copper - action level at consumer taps (ppm)	1.3	1.3	0	2013	0	No	Corrosion of household plumbing systems; Erosion of natural deposits	
Lead - action level at consumer taps (ppb)	0	15	0	2013	1	No	Corrosion of household plumbing systems; Erosion of natural deposits	
Unit Descriptions								
Term	Definition							
ppm	ppm: parts per million, or milligrams per liter (mg/L)							
ppb	ppb: parts per billion, or micrograms per liter (µg/L)							
NTU	NTU: Nephelometric Turbidity Units. Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.							
NA	NA: not applicable							
Important Drinking Water Definitions								
Term	Definition							
MCLG	MCLG: Maximum Contaminant Level Goal: The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.							
MCL	MCL: Maximum Contaminant Level: The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.							
TT	TT: Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.							
AL	AL: Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.							
MRDLG	MRDLG: Maximum residual disinfection level goal. The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.							
MRDL	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.							