Charter Township of Madison Annual Water Quality Report 2011

The Charter Township of Madison Department of Public Works is committed to producing the best quality drinking water possible. The purpose of this report is to provide you with information about your drinking water. The report explains to you where your water comes from and the treatment it receives before it reaches your tap. This report also lists contaminants detected in your water and an explanation of violations in the past year.

Where are your water sources located?

The source of your drinking water comes from two wells. Both have a 10-inch diameter casing with total, combined, pumping capabilities of 1,425 gallons per minute.

The State of Michigan Primacy Agency recently performed an assessment of your source water to determine the susceptibility to or the relative potential of contamination. The susceptibility rating is on a seven-tiered scale from "very-low" to "very high" based primarily on geologic sensitivity, water chemistry and contaminant sources. The susceptibility of your source water is termed "moderately low" (tier 3 of 7.) More information from this report is available by contacting the Madison Township Department of Public Works.

Water from each of the wells is pumped to the Iron Removal Facility, where potassium permanganate and sodium hypochlorite are added to aid in the iron removal process and to provide a disinfectant in the water distribution system.

From here, the water passes through an iron removal process to reduce staining of clothes and fixtures in the distribution system. Treated water is then pumped to the distribution system and elevated storage tank, which maintains constant pressure in the distribution system. The elevated storage tank has a total storage capacity of 250,000 gallons. Our normal system pumpage ranges from 250,000 gallons to 350,000 gallons per day, depending on demand (i.e. weather and fire flow).

The Charter Township of Madison has a complex network of water mains that provide transmission and distribution throughout the service area. The existing Township water system serves approximately 3.5 square miles and has a distribution network consisting of more than 31.5 miles of water main.

The Michigan Department of Environmental Quality (DEQ) monitors public water supplies very closely. One method of monitoring is to require samples to be collected monthly and tested for bacteria. Four samples are collected each month and submitted to DEQ along with the monthly operating report.

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 the water poses a health risk. More information about the contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at 1-800-426-4791.

Groundwater: Our Water Resource

Charter Township of Madison's water supply comes from groundwater. As water travels through the ground, it dissolves naturally occurring minerals and can pick up substances resulting from the presence of animals or from human activity. These include:

- Microbial contaminates, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, livestock and wildlife.
- Inorganic contaminants, such as salts and metals, which can occur naturally or may result from storm water runoff, wastewater discharges, oil and gas production and farming.
- Pesticide and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
- Organic chemicals, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also originate from gas stations, storm runoff and septic systems.
- Radioactive substances, 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, the U.S. Environmental Protection Agency (EPA) prescribes regulations which limit the amount of certain contaminants in drinking water provided by public water systems.

If you would like more information about your water, please call Tim Watterson at the Charter Township of Madison (517) 263-9313.

Some people may be more vulnerable to contaminants in drinking water than the general population. immuno-compromised people, such as those with cancer undergoing chemotherapy, people 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/CDC guidelines on appropriate means to lessen the risk of the infection by Cryptosporidium and other microbial contaminants are available from the **Safe Drinking Water Hotline (800) 426-4791.**

Your Water Quality Data

Each year, Madison Township is required to sample the drinking water for various contaminants. The table below lists all contaminants that were detected in 2010. The state allows us to monitor for certain contaminants less than annually because the concentrations of these contaminants are not expected to change frequently. The most recent results of these tests are also included in the table.

Terms and Abbreviations:

- **Maximum Contaminant Level (MCL):** The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to MCLGs as possible using the best available treatment technology.
- **Maximum Contaminant Level Goal (MCLG):** The level of a contaminant in drinking water below which there is no known or expected health risk.
- **Maximum Residual Disinfectant Level Goal (MRDLG):** 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.
- **Maximum Residual Disinfectant Level (MRDL):** 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.
- **Action Level (AL):** The concentration of a contaminant which, when exceeded, triggers treatment or other requirements which a water system must follow.
  - **Ppm** - parts per million
  - **Ppb** - parts per billion
  - **ND** - Not detectable
  - **N/A** - not applicable

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 Charter Township of Madison 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 drinking water, you may wish to have your water tested. Information on lead in your 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.'

Contaminant	MCL	MCLG	Madison Water	Range of Detection	Sample Date	Violation	Typical Source of Contaminant
Inorganic Contaminants							
Fluoride (ppm)	4	4	0.43	0.51 - 1.2	2011	No	Water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
Sodium[2] (ppm)	NA	NA	13	18 - 121	2011	No	Erosion of Natural Deposits
Monitoring at the Customer's Tap							
Copper (ppb)	AL 1300	1300	90th Percentile = 240	1 out of 20 homes exceeded AL	2011	No	Corrosion of household plumbing systems
Lead (ppb)	AL = 15	0	90th Percentile = 3	0 out of 20 homes exceeded AL	2011	No	Corrosion of household plumbing systems
Chlorine (ppm)	MRDL = 4	MRDL = 4	0.29	0.03-0.36	Monthly	No	Water additive used to control microbes
Total Trihalomethanes (ppb)	80	NA	35	NA	July 09	No	By-product of drinking water disinfection
Halloacetic Acids (ppb)	60	NA	6	NA	July 09	No	By-product of drinking water disinfection

(1) Lead and Copper results list the number of samples that exceeded the action level, rather than the range detected.
(2) Sodium has no MCL associated with it: unregulated contaminant monitoring helps EPA decide if regulating is necessary.