

# 2011 Annual Drinking Water Quality Report

## Cass County Water System

Prepared May 2012

We are pleased to present to you the Annual Drinking Water Quality Report. This report is designed to inform you about the quality water and services we deliver to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water. In order to provide you with facts concerning the Cass County Water System's water supply we will be publishing this water quality report on an annual basis. Some general information on water supplies is included below.

### How We Rate:

We're pleased to report that our drinking water is safe and meets all federal and state requirements. Our water is monitored on a regular basis for many different contaminants using both our in-house laboratories and the Michigan Department of Natural Resources and Environment laboratory. In a typical year well over 1000 tests are performed to insure that proper chemical levels are maintained and to monitor for contaminants.

Additionally, the Michigan Department of Environmental Quality has completed a Source Water Assessment for the Cass County Water System wells. This document defines the susceptibility of the wells to outside contamination. The susceptibility of the Cass County Water System wells was ranked Moderately Low for all wells. If you would like to obtain a copy of this Source Water Assessment, please contact Kevin Cox, Operator in Charge at (269) 782-9703 or (269) 782-8200.

### Our Water System:

The Cass County Water System water source is groundwater drawn from two wells located in Penn Township. These wells are 12 inches in diameter and approximately 280 feet deep. They provide a clean source of drinking water that is safe to drink without any treatment. This groundwater does contain iron, which may stain laundry and plumbing fixtures. A phosphate addition process is used to sequester this iron and reduce any problems associated with iron in the water supply. Other treatment includes addition of chlorine to protect against contamination and addition of fluoride to help prevent tooth decay.

### How to Learn More About Our Water System:

If you have any questions about this report or concerning your water utility, please contact Kevin Cox, Operator in Charge of the system, at (269) 782-9703 or (269) 782-8200. Alternately you can attend any of the regular board meetings for the Cass County Board of Public Works. These meetings are held on the Wednesday following the second Monday of the month. We want our valued customers to be informed about their water utility. If you want to learn more, please contact us.

### General Information About All Drinking Water Sources:

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 from human activity. Contaminants that may be present in source water include:

- 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 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 byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.
- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

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 the water poses a health risk.

In order to ensure that tap water is safe to drink, the Environmental Protection Agency prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

- Vulnerability of sub-populations. 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 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 Environmental Protection Agency's State Drinking Water Hotline (800-426-4791).

### Tables:

The Cass County Water System routinely monitors for contaminants in your drinking water according to Federal and State laws. Tables on the back of this sheet show the results of our monitoring for the period of January 1, 2011, to December 31<sup>st</sup>, 2011, unless a different date is noted on the table.

# Cass County Water System Monitoring

**Table of Regulated Detected Contaminants**

Substance	Highest Level Allowed (MCL)	Highest Level Detected	Range of Values Detected	EPA Goal (MCLG)	Likely Sources of Contaminant	Year
Fluoride	4.0 ppm	0.68 ppm	0.68 - 0.68 ppm	4.0 ppm	Erosion of natural deposits. Water additive that promotes strong teeth.	2011
Barium	2.0 ppm	0.13 ppm	0.13 - 0.13 ppm	2 ppm	Naturally occurring in some ground-waters	2011
Arsenic	10 ppb	Not Detected	Not Detected	0 ppb	Naturally occurring in some ground-waters	2011

**Note:** The Cass County Water System's groundwater contains approximately 0.4 ppm of naturally occurring fluoride. Additional fluoride is added at the wells to bring the level to approximately 0.7 ppm. This is considered the optimum level of fluoride for the prevention of tooth decay.

Substance	Highest MCL Allowed	Highest MCL Detected	Range Detected	Running Annual Average	Likely Sources of Contaminant	Year
Chlorine	4.0 ppm	0.20 ppm	0.09 – 0.27ppm	0.20 ppm	Added as a disinfectant	2011
Combined radium (pCi/L)	5	1.3 pCi/L	N/A	N/A	Erosion of Natural Deposits	2003

The EPA considers 50 pCi/L to be the level of concern for beta particles.

Substance subject to Action Level	Highest Level Allowed (AL)	90 <sup>th</sup> Percentile Detected	Number of sites found above the AL	EPA Goal	Likely Sources of Contaminant	Year
Copper	1.3 ppm	0.14 ppm	3	1.3 ppm	Corrosion of household plumbing	2010
Lead	15 ppb	6 ppb	0	0 ppb	Corrosion of household plumbing	2010

**Note:** 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 Cass County Water System 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 at 1-800-426-4791 or at <http://water.epa.gov/drink/info/lead/index.cfm>.

**Additional Monitoring:  
Table of Unregulated Contaminants**

Substance	Average Level Detected	Range of Values Detected	Likely sources of contaminant	Year
Chloride	17 ppm	17 – 17 ppm	Naturally occurring in some ground-waters	2011
Hardness as CaCO3	255 ppm	255 – 255 ppm	Naturally occurring in some ground-waters	2011
Iron	0.6 ppm	0.6 – 0.6 ppm	Naturally occurring in some ground-waters	2011
Nitrate as N	Not detected	Not detected	Septic tank leachate or fertilizers	2011
Nitrite as N	Not detected	Not detected	Septic tank leachate or fertilizers	2011
Sulfate	Not detected	Not detected	Naturally occurring in some ground-waters	2011
Sodium	16 ppm	16 – 16 ppm	Naturally occurring in some ground-waters	2011

In these tables you will find some terms and abbreviations that many people are not familiar with so the following definitions are provided:

- Parts per million (ppm) or Milligrams per liter (mg/l) - one part per million corresponds to one minute in two years or a single penny in \$10,000.
- Parts per billion (ppb) or Micrograms per liter - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.
- Action Level - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- Maximum Contaminant Level (MCL) - The "Maximum Allowed" is 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. MCL's are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.
- Maximum residual disinfectant level (MRDL) means the level of a drinking water disinfectant below which there is no known or expected risk to health. The MRDL for chlorine is 4.0 mg/L. The chlorine residual levels are calculated based on monthly averages of all samples collected from the water distribution system.
- Maximum residual disinfectant level goal (MRDLG) means the level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants. The MRDLG for chlorine is 4.0 mg/L. The MRDLG for TTHM's is 0.
- Maximum Contaminant Level Goal - The "Goal" (MCLG) is 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.