VILLAGE OF DEERFIELD
ANNUAL WATER QUALITY REPORT
2013

The Village of Deerfield strives to produce 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. The report also lists all of the contaminants detected in your water and an explanation of all violations in the past year.

Your drinking water comes from the Raisin River. The water is pumped from the river to the village's water treatment plant, where the water is disinfected with chlorine to kill harmful bacteria. Fluoride is not added to the water, the Raisin River has natural fluoride of 0.1 ppm to help in prevention of tooth decay and cavities. Chemicals called Alum and polymer are added to the water to help remove particles that make the water cloudy or turbid. Alum causes the particles to clump together and settle to the bottom so they can be easily removed. The water then passes through a series of sand filters to remove more particles.

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.

Some people may be more vulnerable to contaminants in drinking water than the general populations. 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 are 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 (1-800-426-4791).

Deerfield's drinking water comes from the River Raisin. In addition to the naturally occurring minerals in the river, erosion of the riverbank and runoff from animal or human activity on the shore can cause contaminants to be present in the river. These include:

- **Microbial contaminants**, 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 be natural or may result from storm runoff, wastewater discharges, oil and gas production and farming.
- **Organic chemicals**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can, also originate from agricultural practices, storm runoff and septic systems.
- **Radioactive substances**, which can be naturally occurring or be the result of oil and gas production and mining activities.
- **Pesticides and Herbicides,** which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.

The State performed an assessment of our source water in 2003 to determine its susceptibility to the relative potential of contamination. The susceptibility rating is on a six-tiered scale from "very-low" to "very high" based primarily on geologic sensitivity, water chemistry and contaminant sources found in the source area. The susceptibility of our source water is "very high" given land uses and potential contaminant sources. Information from this report is available contacting the Deerfield Water Department.

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 water provided by public water systems.

The Deerfield water plant staff collects and test water samples from the river and throughout the treatment process several times a day. These tests ensure that the proper chemical levels are maintained and that any contaminants that cannot be removed by treatment are at safe levels.

If you would like more information about your water, please call the Deerfield Water Department at 447-3158

WATER QUALITY DATA

Each year, the Village is required to sample the drinking water for various contaminants. In 2011, the village conducted over 350 tests on over 165 contaminants. The table below lists all contaminants that were detected in 2011 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 the 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. MCLGs allow for a margin of safety
- **Maximum Residual Disinfectant Level (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.
- **pCi/l** – picocuries per liter (a measure of radioactivity).
- **ND** – not detected.
- **ppm** – parts per million or milligrams per liter
- **ppb** – parts per billion or micrograms per liter
- **N/A** – not applicable
- **TT** – treatment technique (a required process intended to reduce the level of a contaminant in drinking water.
- **NTU** – Nephelometric Turbidity Units, a measure of the visual cloudiness of water.

Contaminant	MCL	MCLG	*Deerfield Water*	Range of Detections[1]	Sample Date	Violation	Typical Sources of Contaminant
Microbial Contaminants							
Turbidity	TT=1.0[2]	N/A	*Single Highest Measurement = .315NTU*	.055 - .315	Daily	N0	Soil Runoff
	Lowest monthly % of samples meeting turbidity limit: 100%						
	Annual Average Turbidity: 0.113 NTU						
Inorganic Contaminants							
Nitrate	10 ppm	10 ppm	*Single Highest Measurement = 4.02 ppm*	.70/4.2 ppm	2013	NO	Runoff from fertilizer use; leaching from septic tanks, sewage, erosion of natural deposits
Fluoride	4 ppm	4 ppm	*Single Highest Measurement = 0.1 ppm*	0.0-0.1 ppm	2013	NO	Erosion of natural deposits. water additive that promotes strong teeth: discharge from fertilizer and aluminum factories
Sodium[3]	N/A	N/A	*Average Measurement = 19.5*	16.0/20.0 ppm	2013	NO	Naturally present in groundwater
Atrazine	3 ppb	3 ppb	*Highest Annual Average <.20ppb*	<.20/.20	2013	NO	Runoff from herbicide used on row crops
Monitoring at the Consumer's Tap							
Lead	A.L=15 ppb	15 ppb	*100% = 0.006 ppb*	0 out of 20 above the AL	12/27/12	NO	Corrosion of Household plumbing systems; Erosion of natural deposits.

1. Lead and copper results list the numbers that exceeded the action level, rather than the range of detection.
2. Turbidity must be less than or equal to 0.5 NTU in at least 95% of the measurements taken throughout the month. It must never go above 5.0 NTU.
3. Sodium is an unregulated contaminant and thus there is no MCL associated with it. Unregulated contaminant monitoring helps EPA to determine whether there is a need to regulate contaminant.

Contaminant	MCL	MCLG	*Deerfield Water*	Range of Detections[1]	Sample Date	Violation	Typical Sources of Contaminant
Copper	AL = 1300 ppb	1300 ppb	*100% of samples were well under MCL*	1 out of 20 sites were above the AL	12/27/12	No	Corrosion of household plumbing systems, erosion of natural deposits, leaching from wood preservatives
Organic Contaminants							
Total Trihalomethanes	80 ppb	N/A	*Highest Annual average 51.4 ppb*	27.0-75.0 ppb	2013	No	By-product of drinking water chlorination
Total Haloacetic Acids	60 ppb	N/A	*Highest Annual Average 36.5ppb*	21.0-65.0 ppb	2013	No	By-product of drinking water Chlorination
Total Organic Carbon (TOC)	TT	N/A	*59.8 %Removal 25% is Required)*	12.0-74.4 % removal	Sample taken monthly	No	Naturally present in the environment

INFORMATIONAL STATEMENTS ABOUT THE CHEMICALS DETECTED IN YOUR WATER:

About Our Turbidity: Historically the Raisin River has experienced very high turbidity resulting from soil runoff. The water plant is able to remove most of these particles to a level below the allowable limit of 1.0 NTU Turbidity has no health effects, but turbidity can interfere with disinfection and provide a medium for microbial growth.

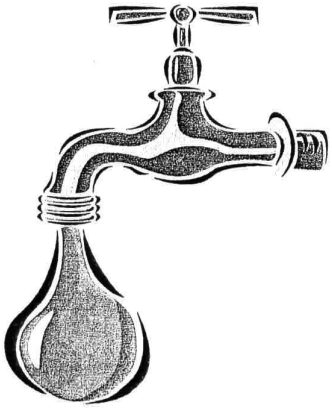
ABOUT OUR NITRATE RESULTS: Nitrate in drinking water at levels above 10 ppm is a health risk. Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant you should ask advice from your health care provider. Pregnant women and infants less than 6 months old will be advised to seek an alternative source of drinking water if nitrate levels exceed 10 ppm. The Village of Deerfield was in compliance with the MCL for nitrates in 2013 thanks to our new water treatment system.

Trihalomethanes are a by-product of disinfection. Compliance with the MCL of 80 ppb is determined by a running annual average. April 2011 our new water treatment system went on line the Village of Deerfield did meet the MCL of 80ppb for trihalomethanes . Sample results from the 2013 fourth quarter average of 51.4 ppb

Haloacetic Acids (HAA5) are a by- product of disinfection. Compliance with the MCL of 60 ppb is determined by a running annual average. The Village of Deerfield did meet the MCL of 60 ppb. The running annual average for the period ending December 31, 2013 is 33.5 parts per billion. However, some people who drink water containing haloacetic acids in excess of the MCL over many years have an increased risk of getting cancer.

If you have any questions about the chemicals in your water, please call the Village of Deerfield at 447-3158 or the Michigan Department of Environmental Quality at 517-780-784

QUALITY ON TAP



The Deerfield Village Council meets at 7:00 pm on the first monday of each month. Meetings are held at the Village hall at 101 West River St. Please feel free to come and participate.

The Village of Deerfield
Todd Nighswander Village President
101 West River Street
Deerfield Michigan 49238
517-447-3138

- **New lead Regulations**

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. Village Of Deerfield is responsible for providing high quality drinking water, but we 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 cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, test methods, and steps you can take to minimize exposure is available from the safe drinking water hotline at 1-800-426-4791 or http://water.epa.gov/drink/info/lead.

In 2013 lead and copper results will be provided to the occupants of homes tested, even if lead was not detected, within 30 days of receipt of the laboratory results.

- **Chlorine residual**

Chlorine residual is based on a RAA, (Running Annual Average) calculated quarterly using monthly Averages from the last 12 months.
The RAA of the Village of Deerfield drinking water is 1.10 mg/l