

# **Lenox Township Department of Public Works 2007 Consumers Annual Report On Water Quality**

Attention: THIS IS AN IMPORTANT REPORT ON WATER QUALITY AND SAFETY

**Lenox Township's Department of Public Works (DPW) wants you to know your tap water is safe to drink and that it meets or surpasses all federal and state standards for quality and safety.**

The Lenox Township DPW is proud of the fine drinking water it supplies and is honored to provide this report to you. The 2007 Consumers Annual Report on Water Quality shows the sources of our water, lists the results of our tests, and contains important information about water and health. The Lenox Township DPW will notify you immediately if there is ever any reason for concern about our water. We are pleased to show you how we have surpassed water quality standards as mandated by the Environmental Protection Agency (EPA) and the State of Michigan Department of the Environmental Quality (MDEQ).

## **About Our System**

Lenox Township DPW provides drinking water to approximately 3,000 people in the 36 square mile area. The system uses water drawn from two master meters. The water traversing through the master meter is supplied and purchased from the City of Detroit, other wise known as DWSD. For Information purposes through out this report, the water supplied to Lenox Township from DWSD is from the Lake Huron treatment plant.

## **About Detroit Water System**

The Detroit Water And Sewerage Department (DWSD) provides drinking water to approximately 4.0 million people in 126 southeastern Michigan Communities. The system uses water drawn from two intakes in the Detroit River, one to the north near the mouth of Lake St. Clair and one to the south near Lake Erie. The water is directed to four (4) large water treatment plants for processing. A fifth water treatment plant located in St. Clair County uses surface water from Lake Huron. Your source water comes from the lower Lake Huron watershed. The watershed includes numerous short, seasonal streams that drain to Lake Huron. The Michigan Department of Environmental Quality in partnership with the U.S. Geological survey, the Detroit Water and Sewerage Department, and the Michigan Public Health Institute performed a source water assessment to determine the susceptibility of potential contamination. The susceptibility rating is a seven-tiered scale ranging from moderately low to very high based primarily on geologic sensitivity, water chemistry, and contaminant sources. The Lake Huron source water intake is categorized as having a moderately low susceptibility to contaminant sources. The Lake Huron water treatment plant has historically provided satisfactory treatment of this source water to meet drinking water standards.

If you would like to know more about this report please visit the Detroit Water and Sewerage Department's website at [www.dwsd.org](http://www.dwsd.org) or contact the Lenox Township Department of Public Works at (586) 749-0230

### **How Do We Know The Water Is Safe To Drink?**

DWSD treatment facilities operate 24 hours a day, seven days a week. The treatment process begins with disinfecting the source water with chlorine to kill harmful microorganisms that can cause illness. Next, a chemical called Alum is mixed with the water to remove the fine particles that make the water cloudy or turbid. Alum causes the particles to clump together and settle to the bottom. Fluoride is also added to protect our teeth from cavities and decay.

The water then flows through fine sand filters called beds. These filters remove even more particles and certain microorganisms that are resistant to chlorine. Finally, a small amount of phosphoric acid and chlorine are added to the treated water just before it leaves the treatment plant. The phosphoric acid helps control the lead that may dissolve in water from household plumbing systems. The chlorine keeps the water disinfected as it travels through water mains to reach your home.

In addition to a carefully controlled and monitored treatment process, the water is tested for a variety of substances before treatment, during various stages of treatment, and throughout the distribution system. Hundreds of samples are tested each week in certified laboratories by highly qualified trained staff. Detroit water not only meets safety and health standards but also ranks among the top 10 in the country for quality and value.

## **Additional Information**

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 the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

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 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 storm water 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 storm water runoff, and residential uses.
- ✓ Organic chemical contaminants including synthetic and volatile organics, 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, The State allows us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. All of the data is representative of the water quality, but some are more than one year old.

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

| <b>Key to Detected Contaminants Tables</b> |   |   |
|--|---|---|
| <b>Symbol</b>                              | <b>Abbreviation for</b>                         | <b>Definition/Explanation</b>   |
| MCLG                                       | <b>Maximum Contaminant Level Goal</b>           | <b>The level of contaminant in drinking water below which there is no known or expected risk to health.</b>   |
| MCL  | <b>Maximum Contaminant Level</b>                | <b>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.</b>                                    |
| MRDLG                                      | <b>Maximum Residual Disinfectant Level Goal</b> | <b>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.</b> |
| MRDL                                       | <b>Maximum Residual Disinfectant Level</b>      | <b>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.</b>                        |
| ppb  | <b>Parts per billion (one in one billion)</b>   | <b>The ppb is equivalent to micrograms per liter. A microgram = 1/1000 milligram.</b>   |
| ppm  | <b>Parts per million (one in one million)</b>   | <b>The ppm is equivalent to milligrams per liter. A milligram = 1/1000 gram.</b>  |
| NTU  | <b>Nephelometric Turbidity Units</b>            | <b>Measures the cloudiness of water.</b>  |
| TT   | <b>Treatment Technique</b>                      | <b>A required process intended to reduce the level of a contaminant in drinking water.</b>  |
| AL   | <b>Action Level</b>                             | <b>The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements which a water system must follow.</b>   |
| HAA5                                       | <b>Haloacetic acids</b>                         | <b>HAA5 is the total of bromoacetic, chloroacetic, dibromoacetic, dichloroacetic, and trichloroacetic acids. Compliance is based on the total.</b>  |
| TTHM                                       | <b>Total Trihalomethanes</b>                    | <b>Total Trihalomethanes is the sum of chloroform, bromodichloromethane, dibromochloromethane, and bromoform. Compliance is based on the total.</b>   |
| n/a  | <b>Not applicable</b>                           |   |
| >  | <b>Greater than</b>                             |   |

Lake Huron Water Treatment Plant  
2007 Regulated Detected Contaminants Tables

| <u>Contaminant</u>  | <u>Test Date</u>    | <u>Units</u> | <u>Health Goal MCL G</u> | <u>Allowed Level MCL</u> | <u>Level Detected</u> | <u>Range of Detection</u> | <u>Violation yes/no</u> | <u>Major Sources in Drinking Water</u>  |
|---|---------------------|--------------|--------------------------|--------------------------|-----------------------|---------------------------|-------------------------|---|
| <b><u>Inorganic Chemicals – Annual Monitoring at Plant Finished Water Tap</u></b>                     |                     |              |                          |                          |                       |                           |                         |   |
| Fluoride  | 8/8/2007            | ppm          | 4                        | 4                        | 1.23                  | n/a                       | No                      | Erosion of natural deposits; Water additive, which promotes strong teeth; Discharge from fertilizer and aluminum factories. |
| Nitrate   | 8/8/2007            | ppm          | 10                       | 10                       | 0.28                  | n/a                       | No                      | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits                                 |
| <b><u>Disinfectant Residuals and Disinfection By-Products – Monitoring in Distribution System</u></b> |                     |              |                          |                          |                       |                           |                         |   |
| Total Trihalomethanes (TTHM)  | <u>Feb-Nov 2007</u> | <u>ppb</u>   | <u>n/a</u>               | 80                       | 17.4                  | 9.3-40.3                  | <u>No</u>               | <u>By-product of drinking water chlorination</u>  |
| Haloacetic Acids (HAA5)   | Feb- Nov 2007       | <u>ppb</u>   | <u>n/a</u>               | 60                       | 11.0                  | 2.6-15.2                  | No                      | <u>By-product of drinking water disinfection</u>  |
| Disinfectant (Total Chlorine residual)  | <u>Jan-Dec 2007</u> | <u>ppm</u>   | <u>MRDG L 4</u>          | <u>MRDL 4</u>            | 0.70                  | 0.56-0.83                 | <u>No</u>               | <u>Water additive used to control microbes</u>  |

| <b><u>2007 Turbidity – Monitored every 4 hours at Plant Finished Water Tap</u></b>   |   |                         |  |
|--|---|-------------------------|--|
| <u>Highest Single Measurement Cannot exceed 1 NTU</u>  | <u>Lowest Monthly % of Samples Meeting Turbidity Limit of 0.3 NTU (minimum 95%)</u> | <u>Violation yes/no</u> | <u>Major Sources in Drinking Water</u> |
| <b>0.11 NTU</b>  | 100%  | No                      | Soil Runoff                            |
| Turbidity is a measure of the cloudiness of water. We monitor it because it is a good indicator of the effectiveness of our filtration system. |   |                         |  |

| <b><u>2007 Microbiological Contaminants – Monthly Monitoring in Distribution System</u></b> |              |   |                                |                         |  |
|---|--------------|---|--------------------------------|-------------------------|--|
| <u>Contaminant</u>  | <u>MCL G</u> | <u>MCL</u>  | <u>Highest Number Detected</u> | <u>Violation yes/no</u> | <u>Major Sources in Drinking Water</u> |
| Total Coliform Bacteria   | <u>0</u>     | <u>Presence of Coliform bacteria &gt; 5% of monthly samples</u> | <u>0</u>                       | no                      | Naturally present in the environment.  |

|   |          |  |          |           |                                     |
|---|----------|--|----------|-----------|-------------------------------------|
| <b>coli or cal</b><br>liform<br>acteria | <u>0</u> | <u>A routine sample and a repeat sample are total coliform positive, and one is also fecal or E.coli positive.</u> | <u>0</u> | <u>no</u> | Human waste and animal fecal waste. |
|---|----------|--|----------|-----------|-------------------------------------|

| <b>2005 Lead and Copper Monitoring at Customers' Tap</b>  |                  |              |                         |                        |  |                                  |                         |  |
|---|------------------|--------------|-------------------------|------------------------|--|----------------------------------|-------------------------|--|
| <u>Contaminant</u>  | <u>Test Date</u> | <u>Units</u> | <u>Health Goal MCLG</u> | <u>Action Level AL</u> | <u>90<sup>th</sup> Percentile Value*</u> | <u>Number of Samples Over AL</u> | <u>Violation yes/no</u> | <u>Major Sources in Drinking Water</u>   |
| Lead  | 2005             | ppb          | 0                       | 15                     | 0 ppb                                    | 0                                | no                      | Corrosion of household plumbing system; Erosion of natural deposits.                                   |
| Copper  | 2005             | ppm          | 1.3                     | 1.3                    | 0-164 ppm                                | 0                                | no                      | Corrosion of household plumbing system; Erosion of natural deposits; Leaching from wood preservatives. |
| *The 90th percentile value means 90 percent of the homes tested have lead and copper levels below the given 90th percentile value. If the 90th percentile value is above the AL, additional requirements must be met. |                  |              |                         |                        |  |                                  |                         |  |

| <u>Regulated Contaminant</u> | <u>Treatment Technique</u>   | <u>Running annual average</u> | <u>Monthly Ratio Range</u> | <u>Violation Yes/No</u> | <u>Typical Source of Contaminant</u> |
|------------------------------|--|-------------------------------|----------------------------|-------------------------|--------------------------------------|
| Total Organic Carbon (ppm)   | The Total Organic Carbon (TOC) removal ratio is calculated as the ratio between the actual TOC removal and the TOC removal requirements. The TOC was measured each month and because the level was low, there is no requirement for TOC removal. |                               |                            |                         | Erosion of natural deposits          |

### 2007 Special Monitoring

| <u>Contaminant</u> | <u>MCLG</u> | <u>MCL</u> | <u>Level Detected</u> | <u>Source of Contamination</u> |
|--------------------|-------------|------------|-----------------------|--------------------------------|
| Sodium (ppm)       | n/a         | n/a        | 4.81                  | Erosion of natural deposits    |

Unregulated contaminants are those for which EPA has not established drinking water standards. Monitoring helps EPA to determine where certain contaminants occur and whether it needs to regulate those contaminants.

| <u>Treatment Technique</u>   |            |  |  |  |   |  |   |
|------------------------------|------------|--|--|--|---|--|---|
| <u>Regulated Contaminant</u> | <u>MCL</u> | <u>Treatment Technique (TT) Standard</u>                                       | <u>Treatment Technique (TT) Violation yes/no</u> | <u>Reason for violation</u>  | <u>Action Taken</u>                             | <u>Major Sources in Drinking Water</u>                               | <u>Health Effects</u>   |
| Lead                         | TT         | No more than (9) days in a six (6) month period below the established minimum. | Yes  | During a 14-day period in January and February, phosphate pump malfunctions resulted in below optimal dosages. Phosphate was added to the water, but at a dosage below the state designated minimum. Despite this lower than acceptable dosage, phosphate residual concentrations in water leaving the plant and entering the distribution system were maintained above the established minimum. | The chemical feed pumps have all been repaired. | Corrosion of household plumbing system; Erosion of natural deposits. | Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure. |

|        |    |   |     |  |   |  |   |
|--------|----|---|-----|--|---|--|---|
| Copper | TT | No more than (9) days in a six (6) month period below the established minimum | Yes | During a 14-day period in January and February, phosphate pump malfunctions resulted in below optimal dosages. Phosphate was added to the water, but at a dosage below the state designated minimum. Despite this lower than acceptable dosage, phosphate residual concentrations in water leaving the plant and entering the distribution system were maintained above the established minimum. | The chemical feed pumps have all been repaired. | Corrosion of household plumbing system; Erosion of natural deposits; Leaching from wood preservatives. | Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's disease should consult their personal doctor. |
|--------|----|---|-----|--|---|--|---|

For more information, please contact Lenox Township Department of Public Works at (586) 749-0230.

### Important Health Information

#### Lead

Lenox Township has tested homes with plumbing systems that may contribute lead to the household water supply. The latest round of testing shows that none of the homes tested (above) have lead levels above the action level. There are no homes in Lenox Township with Lead services. There are homes constructed prior to the mid 1980's that may have interior lead solder joint plumbing. Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your homes plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have you water tested and flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the Safe Drinking Water Hotline (800) 426-4791. You can take the following precautions to minimize your exposure to lead that may have leached into your drinking water from your pipes.

- Run your water for 30 seconds to 2 minutes. This practice should be followed anytime your water has not been used for more than 6 hours.
- Always use cold water for drinking, cooking or making baby formula.
- Use faucets and plumbing material that are either lead free or will not leach unsafe levels of lead into your water.

#### People With Special Health Concerns

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 Safe Drinking Water Hotline (800-426-4791).

### **Cryptosporidium**

Cryptosporidium is a microbial parasite, which is found in surface water throughout the U.S. Although Cryptosporidium can be removed by filtration, the most commonly used filtration methods cannot guarantee 100 percent removal. Monitoring of our source water and /or finished water indicates the presence of these organisms. Current test methods do not enable us to determine if these organisms are dead or if they are capable of causing disease. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals are able to overcome the disease within a few weeks. However, immuno-compromised people have more difficulty and are at greater risk of developing severe, life threatening illness. Immuno-compromised individuals are encouraged to consult their doctor regarding appropriate precautions to take to prevent infection. Cryptosporidium must be ingested for it to cause disease, and may be passed through other means than drinking water.

### **Opportunities for Public Participation**

The Lenox Township Board of Trustees meets the first Monday of each month. This meeting is for the general public to address the Board of Trustees with any problems or situations that the Board should be aware of. This meeting does not discuss the quality of water and any questions in regards to water quality will be directed to the office of the DPW.

We welcome your comments and opinions about this report and will be happy to answer any questions you may have. Please direct your comments or questions to the Lenox Township DPW at (586) 749-0230

### **Other Monitoring**

In addition to the testing that is required to be performed, DWSD voluntarily tests for hundreds of additional substances and microscopic organisms to make certain our water is safe and of the highest quality.

*"El informe contiene informacion importante Sobre la calidad del agua en su comunidad. Tradumalo o hable con alguien que lo entienda bien"*

