

2007 Water Quality Report for the City of Rochester Hills

WSSN# 00325

Continuing Our Commitment

Once again we proudly present our annual water quality report. This edition covers all testing completed from January through December 2007. We are pleased to tell you that our compliance with all state and federal drinking water laws remains exemplary. As in the past, we are committed to delivering the best quality drinking water. To that end, we remain vigilant in meeting the challenges of source water protection, water conservation, and community education while continuing to serve the needs of all of our water users.

For more information about this report, or for any questions relating to your drinking water, please call Paul M. Davis, P.E., City Engineer, at 248-656-4640.

**Rochester Hills
water supply
surpasses all
federal
drinking water
standards**

Our water supply and answers to some most commonly asked questions:

Where does the City's water come from?

City of Rochester Hills water comes from the greatest freshwater supply in the world – the **Great Lakes**. Specifically, our water source is **Lake Huron**, second largest of the lakes and first in the mnemonic, H.O.M.E.S., that helps schoolchildren remember the names of the five lakes that distinguish our region.

Lake Huron is 206 miles long, 183 miles wide, and is noted for beautiful vistas from the St. Mary's River and the Straits of Mackinac in the north all the way to the St. Clair River at Port Huron. The deepest sounding for Lake Huron is 750 feet, and the lake holds an approximate volume of 850 cubic miles of water.

The City of Rochester Hills' secondary water source is the Northeast Water Treatment Plant, which obtains its water from the Detroit River. For more information on this water source, please contact the Department of Public Services at 248-656-4685.

Rochester Hills purchases water from the Detroit Water and Sewerage Department (DWSD). DWSD filters and treats the lake water at its plant in Port Huron before releasing it into the pipes that deliver it to us.

Lake Huron Plant

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 potential 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 contact your local water department at 248-656-4685.

How many miles of water main does the City of Rochester Hills have?

The Rochester Hills water supply system consists of more than *428 miles of water main, over 4,370 isolation valves, four master meter facilities and more than 24,000 water meters to serve our 22,000 residential and business customers.

The City of Rochester Hills sells over three billion gallons of water to its customers annually. Our aim is to provide seamless services to protect the health, safety and welfare of our customers; to respond promptly, courteously and efficiently to customer needs; and to improve the reliability and performance of the overall system through maintenance, enhancements and additional installations.

We are committed to continuing to provide an excellent service that our customers can count on without worry. From Lake Huron to your kitchen faucet, our water supply receives high marks for quality.

As part of the 1996 Amendments to the federal Safe Drinking Water Act, the Consumer Confidence Report (CCR) Rule became effective September 1998. The CCR Rule requires all community water systems in the United States to prepare an annual water quality report and to deliver it to all of the water system's customers. The CCR Rule was published in the Federal Register on August 19, 1998 and can be found at the U.S. EPA's website - www.epa.gov/safewater/hfacts.htm.

Does our water have fluoride?

At the last testing (**August 2007**), there was 1.23 ppm detected in the water. You may want to take the enclosed chart to your dentist to determine whether fluoride supplements are required.

My water is cloudy. What does that mean?

Normally, cloudy water means that there is air in the line. Several things like a power outage or a repair to a water main can cause this problem. Letting your water run in the kitchen sink for a few minutes usually corrects the problem. If not, give Public Service a call at 248-656-4685.

Are Area Maintenance Meters available at the City of Rochester Hills?

Yes. Area Maintenance water meters are available. These "second" meters save residents the sewer costs on water used outside. For additional information and meter costs, call the Public Services staff at 248-656-4685.

* Revised due to department review.

Information also available from:

Rochester Hills Department of Public Services.....248-656-4685

Detroit Water & Sewerage Department.....313-224-4800

U.S. EPA Safe Drinking Water Hotline.....800-426-4791

Oakland County Health Division Laboratory.....248-424-7098

City of Rochester Hills Web Page.....www.rochesterhills.org

U.S. EPA Web Site.....www.epa.gov/safewater/hfacts.html

Community Participation

You are invited to participate in our public forum and voice your concerns about your drinking water. Regular City Council meetings are held every Monday of each month at 7:30 p.m. in the City Hall Auditorium, 1000 Rochester Hills Drive, Rochester Hills, MI 48309.

The Detroit Board of Water Commissioners holds regular, public meetings at 2:00 p.m. on the fourth Wednesday of each month at the Water Board Building, 735 Randolph Street, Detroit, Michigan. Interested members of the public are welcome to attend. Call 313-224-4800 for further information.

The information presented in this report is important for consumers to understand. If you have a household member or neighbor who doesn't read English, please recommend that they seek the help of a reader or translator. Thank you for your neighborly assistance.

What's in My Water?

We are pleased to report that during the past year, the water delivered to your home or business complied with, or did better than, all state and federal drinking water requirements. For your information, we have compiled the table below to show what substances were detected in our drinking water during 2007. Although all of the substances listed below are under the Maximum Contaminant Level (MCL) set by the U.S. EPA, we feel it is important that you know exactly what was detected and how much of the substance was present in the water. The state requires us to monitor for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

During 2007, DWSD conducted monitoring for the Unregulated Contaminant Monitoring Rule. None of these contaminants were detected. Results are available upon request.

Lake Huron Water Treatment Plant 2007 Regulated Detected Contaminants Tables

Contaminant	Test Date	Units	Health Goal MCLG	Allowed Level MCL	Level Detected	Range of Detection	Violation yes/no	Major Sources in Drinking Water
Inorganic Chemicals – Annual Monitoring at Plant Finished Water Tap								
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
Disinfectant Residuals and Disinfection By-Products – Monitoring in Distribution System								
Total Trihalomethanes (TTHM)	Feb-Nov 2007	ppb	n/a	80	17.4	9.3-40.3	No	By-product of drinking water chlorination
Haloacetic Acids (HAA5)	Feb- Nov 2007	ppb	n/a	60	11.0	2.6-15.2	No	By-product of drinking water disinfection
Disinfectant (Total Chlorine residual)	Jan-Dec 2007	ppm	MRDGL 4	MRDL 4	0.70	0.56-0.83	No	Water additive used to control microbes

2007 Turbidity – Monitored every 4 hours at Plant Finished Water Tap			
Highest Single Measurement Cannot exceed 1 NTU	Lowest Monthly % of Samples Meeting Turbidity Limit of 0.3 NTU (minimum 95%)	Violation yes/no	Major Sources in Drinking Water
0.11 NTU	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.			

2007 Microbiological Contaminants – Monthly Monitoring in Distribution System					
Contaminant	MCLG	MCL	Highest Number Detected	Violation yes/no	Major Sources in Drinking Water
Total Coliform Bacteria	0	Presence of Coliform bacteria > 5% of monthly samples	in one month - 0	No	Naturally present in the environment.
<i>E. coli</i> or fecal coliform bacteria	0	A routine sample and a repeat sample are total coliform positive, and one is also fecal or <i>E. coli</i> positive.	entire year - 0	No	Human waste and animal fecal waste.

2005 Lead and Copper Monitoring at Customers' Tap								
Contaminant	Test Date	Units	Health Goal MCLG	Action Level AL	90 th Percentile Value*	Number of Samples Over AL	Violation yes/no	Major Sources in Drinking Water
Lead	2005	ppb	0	15	7.2	1	No	Corrosion of household plumbing system; Erosion of natural deposits.
Copper	2005	ppm	1.3	1.3	.0386	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.								

Regulated Contaminant	Treatment Technique	Running annual average	Monthly Ratio Range	Violation Yes/No	Typical Source of Contaminant
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

Contaminant	MCLG	MCL	Level Detected	Source of Contamination
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.

Treatment Technique							
Regulated Contaminant	MCL	Treatment Technique (TT) Standard	Treatment Technique (TT) Violation yes/no	Reason for violation	Action Taken	Major Sources in Drinking Water	Health Effects
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 Paul M. Davis, City Engineer at 248/656-4640.

Notice to residents whose water comes from wells:

The Oakland County Health Division Laboratory conducts free Bacteriological analysis of water. Sample bottles and instructions can be obtained at the City Department of Public Services 248-656-4685. The OCHD tests only for the coliform bacterial group, including *E. coli*. Private laboratories will test water samples for other contaminants for a fee. See listing under the heading, "Water Analysis", in the Yellow Pages.

Water Conservation Tips

Water conservation measures are an important first step in protecting our water supply. Such measures not only save the supply of our source water, but can also save you money by reducing your water bill. Here are a few suggestions:

Conservation measures you can use inside your home include:

- Fix leaking faucets, pipes, toilets, etc.
- Replace old fixtures, install water-saving devices in faucets, toilets and appliances.
- Wash only full loads of laundry.
- Do not use the toilet for trash disposal.
- Take shorter showers.
- Do not let the water run while shaving or brushing teeth.
- Soak dishes before washing.
- Run the dishwasher only when full.

You can conserve outdoors as well:

- Water the lawn and garden in the early morning or evening.
- Use mulch around plants and shrubs.
- Repair leaks in faucets and hoses.
- Use water-saving nozzles.
- Use water from a bucket to wash your car, and save the hose for rinsing.

Information on other ways that you can help conserve water can be found at www.epa.gov/safewater/publicoutreach/index.html.

Substances Expected to Be in Drinking Water...

In order to ensure that tap water is safe to drink, the U.S. EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. *The presence of these contaminants does not necessarily indicate that the water poses a health risk.*

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" (untreated surface or ground 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 organics, which are by-products 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.

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 City of Rochester Hills 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 and cooking. If you are concerned about elevated lead levels 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 Environmental Protection Agency's Safe Drinking Water Hotline at (800) 426-4791 or at <http://www.epa.gov/safewater/lead>.

Special Health Information

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. The U.S. EPA/CDC (Centers for Disease Control and Prevention) 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.

Key to Detected Contaminants Tables

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