2010 Water Quality Report

Published in 2011

A Message to Our Consumers

In order to ensure that tap water is safe to drink, the Environmental Protection Agency (EPA) prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration 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 contaminants does not necessarily indicate that 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 at (800) 426-4791****.*

The Detroit Water and Sewerage Department provides its consumers with high quality water and is honored to provide this report to you. The Water Quality Report gives the sources of our water, lists the results of our tests, and contains important information about water and health. The State and EPA require us to test our water on a regular basis to ensure its safety. As a public utility, we are required to report to our customers annually on the quality of the drinking water we deliver to you. We met all the monitoring and reporting requirements for 2010.

The Detroit Water and Sewerage Department 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 and the State of Michigan Department of Natural Resources and Environment.

Communities

Served by Detroit Water and Sewerage Department

The Detroit Water and Sewerage Department provides drinking water to approximately 4 million people in 126 southeast Michigan communities. The system uses water drawn from three intakes. Two intakes are located in the Detroit River: one to the north near the mouth of Lake St. Clair and one to the south near Lake Erie. The third intake is located in Lake Huron. The Department has five water treatment plants. Four of the plants treat water drawn from the Detroit River intakes. The fifth water treatment plant located in St. Clair County uses water drawn from Lake Huron. Our Detroit customers are provided service from our four plants that treat water drawn from the Detroit River.

Lead

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. Detroit Water and Sewerage Department 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 or at **http://www.epa.gov/safewater/lead**.

The Detroit Water and Sewerage Department wants you to know your tap water meets or surpasses all federal and state standards for quality and safety.

Source Water Assessment

Your source water comes from the Detroit River, situated within the Lake St. Clair, Clinton River, Detroit River, Rouge River, Ecorse River, in the U.S. and parts of the Thames River, Little River, Turkey Creek, and Sydenham watersheds in Canada. 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 in 2004 to determine the susceptibility of potential 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 our Detroit River source water intakes were determined to be highly susceptible to potential contamination. However, all four Detroit water treatment plants that use source water from the Detroit River have historically provided satisfactory treatment of this source water to meet drinking water standards.

DWSD has initiated source-water protection activities that include chemical containment, spill response, and a mercury reduction program. DWSD participates in a National Pollutant Discharge Elimination System permit discharge program and has an emergency response management plan. If you would like to know more information about this report or a complete copy of this report please, contact the Water Quality Manager at **(313) 926-8102**.

Substances Found in Source Water

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 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.

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.

City of Detroit Public Water System
2010 Regulated Detected Contaminants

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 Tap								
Fluoride	2010	ppm	4	4	**1.19**	**0.63 - 1.19**	**no**	Erosion of natural deposit; Water additive, which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate	08/23/2010	ppm	10	10	**0.28**	**n/a**	**no**	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Barium	06/09/2008	ppm	2	2	**0.01**	**n/a**	**no**	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Selenium	06/09/2008	ppb	50	50	**1**	**n/a**	**no**	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines.
Disinfectant Residuals and Disinfection By - Products Monitoring in the Distribution System (Level Detected is the Highest Running Annual Average Based on Quarterly Sampling)								
TTHM	Feb-Nov 2010	ppb	n/a	80	**23.1**	**2.7 - 40.1**	**no**	By-product of drinking water chlorination.
HAA5	Feb-Nov 2010	ppb	n/a	60	**10.2**	**1.8 - 19.6**	**no**	By-product of drinking water chlorination.
Disinfectant (Bromate)	Jan-Dec 2010	ppb	0	10	**2.0**	**0.0 - 2.4**	**no**	By-product of drinking water disinfection.
Disinfectant (Chlorine)	Jan-Dec 2010	ppm	MRDGL 4	MRDL 4	**0.73**	**0.49 - 0.85**	**no**	Water additive to control microbes.

2010 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
0.28 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.

2010 Microbial Contaminants - Monthly Monitoring in the Distribution System

CONTAMINANT	MCLG	MCL	HIGHEST DETECTED	VIOLATION YES/NO	MAJOR SOURCES IN DRINKING WATER
Total coliform bacteria	0	Presence of coliform bacteria > 5% of monthly samples.	**1.7%**	**no**	Naturally present in the environment.
***E. coli* or fecal coliform bacteria**	0	A routine sample and a repeat sample are total coliform positive, and one is also fecal or *E. coli* positive.	**0****	**no**	Human waste and animal fecal waste.

2008 Lead and Copper Monitoring at the Customer's Tap

CONTAMINANT	TEST DATE	UNITS	HEALTH GOAL MCLG	ACTION LEVEL AL	90TH PERCENTILE VALUE*	NUMBER OF SAMPLES OVER AL	VIOLATION YES/NO	MAJOR SOURCES IN DRINKING WATER
Lead	2008	ppb	0	15	**4**	**0**	**no**	Corrosion of household plumbing system; Erosion of natural deposits; leaching from wood preservatives.
Copper	2008	ppm	1.3	1.3	**0.083**	**0**	**no**	

* 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 is measured each quarter and because the level is low, there is no requirement for TOC removal.			no	Erosion of natural deposits.

2009 Special Monitoring

CONTAMINANT	UNITS	MCLG	MCL	LEVEL DETECTED	SOURCE OF CONTAMINATION
Sodium	ppm	n/a	n/a	**4.80**	Erosion of natural deposits

****On December 7 and 8, 2010, one routine and one repeat E. coli positive samples were detected at a Detroit fire station. Additional samples were collected on December 9 and 10, 2010 and it was determined the contamination was restricted to the bathroom faucet aerator within the Detroit fire station. The quality of the water being delivered to the customers of the City of Detroit Water and Sewerage Department was never affected. The Detroit Water and Sewerage Department will notify you immediately if there is any concern about your water.**

Key to Detected Contaminants Tables

These tables are based on tests conducted by DWSD in the year 2010 or the most recent testing done within the last five calendar years. We conduct many tests throughout the year, however, only tests that show the presence of a substance or required special monitoring are shown here. The table below is a key to the terms used in the tables.

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. MCL's are set as close to the MCLG's 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
ND	Not Detected	
TT	Treatment Technique	A required process intended to reduce the level of a contaminant in drinking water.
AL	Action Limit	The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements which a water system must follow.
HAA5	Haloacetic acid	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	

ATTENTION!
This is an important report on water quality and safety.
El Informe contiene información importante sobre la calíad del agua en su comunidad.
Por favor, si esta información no es comprensible para usted, solicite a alguien que se la traduzca.

2010
Water Quality Report

Postal Customer

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About Water

The DWSD Speakers Bureau provides an invaluable, face-to-face opportunity for school students, community groups, and others to learn about the quality and production of Detroit's drinking water. To schedule a speaker, call the Public Affairs Division at **(313) 964-9570**.

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. The Environmental Protection Agency and Center for Disease Control 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**.

Public Participation

The Board of Water Commissioners meeting is held each month. There are also public hearings and meetings open to the public. To confirm dates and times or for information on other activities happening in the Department, please contact our Public Affairs Division at **(313) 964-9570** or visit our website **www.dwsd.org**

Emergency

To report emergencies, such as flooded streets and basements, missing manhole covers or water main breaks, call our 24-hour number: **(313) 267-7401**.

This report is available on our website at **www.dwsd.org.**

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

Public Affairs Division at: (313) 964-9570
or you may email your comments to:
public.affairs@dwsd.org