Unregulated Contaminant Monitoring: Unregulated contaminant monitoring helps EPA determine where certain contaminants occur and whether they need to regulate those contaminants. In September 1999, EPA revised the Unregulated Contaminant Monitoring Rule (UCMR) as required by the 1996 Amendments to the Safe Drinking Water Act. The data generated by the new UCMR will be used to evaluate and prioritize contaminants on the Drinking Water Contaminant Candidate List, a list of contaminants that EPA is considering for possible new drinking water standards. This will help to ensure that future decisions on drinking water standards are based on sound science.

- The City of Howell participated in this testing in September and December of 2001 and tested again in 2008.
- The EPA is soon expected to set a radon standard for drinking water at 300pCi/L (see definitions in table on back).

* **The City of Howell voluntarily tested for Radon in 2001 and our results were 80 pCi/L.**

HOW CAN YOU GET INVOLVED?

City of Howell — City Council Meetings:

All City Council meetings are held at Howell City Hall, 611 E. Grand River, Howell MI 48843 (517) 546-3502, Council Chambers, Lower Level.

Meeting Dates: Go to cityofhowell.org, navigate to the Government tab /City Council / Council Meeting Dates to get the current meeting schedule & times.

Howell Citizens Academy:

This seven-week program is an exciting way to learn abut how our City is governed and to involve residents in community issues.

Participants will visit various departments and facilities and experience local decision-making processes to help create a better understanding and a stronger partnership with the City. You will experience: Tours & discussion of Public Works, Water & Wastewater Treatment Plants; Tours & discussion of Police and Fire Departments; Zoning, Planning, building, Code Enforcement, DDA & Community Development; Overview of Local Government; The budget process revenues and expenses, voting process, assessing process and Information Technology.

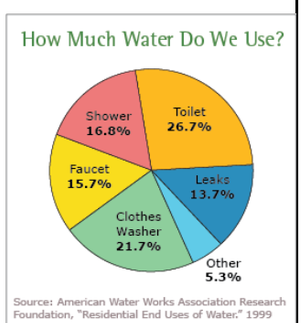
Questions & Register by calling the City Managers office at **(517) 546-3861** or email: **thecity@ci.howell.mi.us**

Priority for enrollment will be given to City residents first, and you must be 18 years of age or older to participate.

Pledge to Eliminate Bad Water Habits:

Meet with your family & share ways you can use water more efficiently.

- Take shorter showers / use less water in the bathtub.
- Turn the water off while you brush your teeth or wash your hands.
- Use a broom to clean driveway instead of a hose.
- Place a layer of organic mulch around outdoor plants to reduce evaporation & save hundreds of gallons of water a year.
- Install EPA's Water Sense—approved aerators on your faucets & low flow showerheads.
- Conduct a home water audit
- Check all water fixtures for leaks and fix/ replace those that are leaky.
- Perform a dye test to see if your toilets are leaking.
- Aerate your lawn. Punch holes in your lawn about six inches apart so water will reach the roots rather than run off the surface.
- Water your lawn either in the morning or the evening, rather than the middle of the day, to reduce loss of water due to evaporation.



Visit: **www.epa.gov/WaterSense** for more information

As in Previous Years: The City is committed to providing you safe and reliable water. We are pleased to provide you with this information to keep you fully informed about your water. We will be updating this report annually and will also keep you informed of anything that may occur throughout the year. For more information about your water, or the contents of this report, contact Jim Webster, Operations Manager — at 517-546-5309.

Get Copies of this report (and previous years) at: **www.cityofhowell.org/watertreatment** or at the Water Plant.

City of Howell - 2013 Water Quality Report

This report covers the drinking water quality for the City of Howell for the calendar year of 2013.

This information is a snapshot of the quality of the water that was provided to you in 2013. Included are details about where your water comes from, what it contains, and how it compares to U.S. Environmental Protection Agency (EPA) and State of Michigan Department of Environmental Quality (MI-DEQ) standards.

The staff at the City of Howell Water Treatment Plant are highly dedicated to bringing you the best drinking water possible. We vigilantly safeguard the water supplies and once again report that your tap water met or exceeded all water quality standards established by federal (EPA) and state (MI-DEQ) regulations and have not violated any maximum contaminant levels (MCL).

Water Supply and Treatment:

The City of Howell is a ground water system. Water is drawn from deep rock wells (over 400 feet) taken from the Michigan formation and the deeper Marshall sandstone aquifer. We are a lime softening plant removing about 70% of the hardness. the softened water is then chlorinated, fluoridated, filtered and stored in reservoirs for distribution to our customers.

General Health 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 that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the **EPA's: Safe Drinking Water Hotline (800-426-4791).**

For People with Special Health Concerns:

Some people may be more vulnerable to contaminants in drinking water than the general population. Immune-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune systems 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/Centers for Disease Control (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).

Sources of Drinking Water:

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. Our water comes from 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.
- **Radioactive contaminants,** which can be naturally occurring or be the result of oil and gas production and mining activities.
- **Organic chemical contaminants,** including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.

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. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which provide the same protection for public health.

Additional Information for Lead in Drinking Water:

The action level for lead in drinking water is 15 parts per billion (ppb) or 0.015 milligrams per liter (mg/l). The EPA requires Water Suppliers to take action to reduce lead levels if the 90th percentile sample taken is above the 15 ppb action level. 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 Howell 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 you tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your drinking water, you may wish to have your water tested. **NOTE:** The City tests for lead & copper every 3 years, next testing to be summer 2016. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline (800-426-4791) or at **www.epa.gov/drink/info/lead.**

WATER SYSTEM MAJOR IMPROVEMENTS: 2013

- **Cone Room Dehumidifier:** Installed new coils on the Plant Dehumidifier, this keeps the room dry and avoids sweating of the cone & piping in the plant, which helps maintain our corrosion control program.
- **Wells:** Pulled both Well 4 & Well 8 this calendar year for replacements of pumps, new column pipe and complete rebuild of the well. Cathodic protection was added to well 4, all large wells now have this protection. With these 2 wells now completed, all our wells have been updated, we are seeing major electricity usage improvements from these upgrades.
- **Wellhead Protection Program:** Updated original plan from 2001 See below for more information.

Wellhead Protection Program (WHPP) Updated: Wellhead protection is a planning and management approach designed to protect public groundwater supply systems from contamination. The objective is to protect public water supply wells by controlling or managing all potential sources of contamination within a designated area surrounding the well or well field. An active wellhead protection program identifies areas that contribute water to public water supply wells, potential sources of contamination within those areas, and educates residents on developing best management practices that minimize threats to the public water supplies. During the Fall of 2012, the City of Howell and the Marion, Howell, Oceola and Genoa Sewer & Water Authority (MHOG) were awarded a grant from the Michigan Department of Environmental Quality (MDEQ) for specified activities related to Wellhead Protection. The cooperative effort of working together will result in a cost savings to both the City and MHOG. AMEC Environment & Infrastructure Inc. (AMEC) and Hubbell, Roth & Clark, Inc. (HRC) were our teaming partners for this work.

The new updated plan was delivered summer of 2013.

WHPP - Mission Statement: It is the mission of the City of Howell to continuously protect the local drinking water resource from potential and existing environmental contamination for generations to come.

The primary goal for the wellhead protection program (WHPP) is the formulation and implementation of a set of actions and management practices to protect the water supply from potential sources of contamination. We identified the following specific goals for the program:

Goal 1: To develop a comprehensive groundwater protection plan that addresses, at a minimum, each of the elements required in a State of Michigan wellhead protection program.

Goal 2: To instill a sense of ownership of the well fields and encourage the local community to recognize that wellhead protection is both worthwhile and necessary.

Goal 3: Provide the local governmental framework, such as regulations and policies to prevent groundwater contamination from occurring at businesses and industries which store, use or generate quantities of hazardous substances or petroleum substances in the City's delineated wellhead protection areas (WHPA).

Goal 4: To protect groundwater resources through the development of administrative options. This includes groundwater protection ordinances and site plan review criteria that are consistent with and utilize all of the authority granted by state zoning enabling legislation for cities and townships.

Goal 5: To promote inter-governmental and intra-governmental cooperation to assure protection of the water resources within the wellhead protection area.

Goal 6: Enhance communication and coordination between local and state agencies on pollution incidents to assure adequate cleanup for natural resource and public health protection.

Goal 7: Work with local, state, and federal agencies to minimize the impacts of listed sites of environmental contamination on the City's groundwater resources.

Goal 8: Site new wells properly to maximize yield and minimize potential contamination.

Goal 9: Establish WHPA delineations based on the 10 year capture zone identified in the delineation process based on current well field conditions and when new wells are developed.

Goal 10: To gather public support & participation in the development and on-going implementation of the WHPP.

Goal 11: Monitor existing and future activities within the WHPA that have been identified as potential sources of contamination.

Goal 12: Inform landowners of the potential impacts of abandoned wells on the City's water supply; complete an inventory of abandoned private wells within the WHPA; and seek funding to work towards properly abandoning any such wells.

Goal 13: Seek additional funding from local, state and federal sources to implement the WHPP.

2013 WATER QUALITY DATA TABLE

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of contaminants in water provided by public water systems. The table below lists all of the drinking water contaminants that we detected during the **2013** calendar year. Although many more contaminants were tested, only those substances listed below were found in your water. All sources of drinking water contain some naturally occurring contaminants. At low levels, these substances are generally not harmful in our drinking water. Removing all contaminants would be extremely expensive, and in most cases, would not provide increased protection of public health. A few naturally occurring minerals may actually improve the taste of drinking water and have nutritional value at low levels. Unless otherwise noted, the data presented in this table is from testing done in the calendar year of the report. The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. As such, some of our data, though representative, may be more than one year old. In this table you will find terms and abbreviations that might not be familiar to you. To help you better understand these terms, we have provided the definitions below the table.

Contaminants	Units	MCLG or MRDLG	MCL, TT, or MRDL	Your Water	Range Low	Range High	Sample Date	In Compliance	Typical Sources
Disinfectants & Disinfection By-Products (There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.)									
Chlorine as Cl2	ppm	4	4	0.38	0.20	0.90	2013	YES	Water additive used to control microbes
Haloacetic Acids - HAA5	ppb	60	N/A	1.8	N/A	N/A	2013 Next testing 2016	YES	By-product of drinking water chlorination.
TTHM - Total Trihalomethanes	ppb	80	N/A	11.0	N/A	N/A	2013 Next testing 2016	YES	By-product of drinking water chlorination.
Inorganic Contaminants									
Arsenic	ppb	0	10	<1.0	N/A	N/A	2013	YES	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes.
Barium	ppm	2	2	0.27	N/A	N/A	2006 Next testing 2015	YES	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chromium	ppm	0.1	0.1	0.002	N/A	N/A	2010	YES	Discharge from steel and pulp mills; Erosion of natural deposits
Fluoride (plant tap)	ppm	4	4	0.74	0.70	0.77	2013	YES	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Total Hardness (plant tap)	ppm	N/A	N/A	103.0	92.0	139.0	2013	YES	Natural Deposits
Iron (plant tap)	ppm	N/A	N/A	0.06	N/A	N/A	2013	YES	Natural Deposits
Sodium (optional)	ppm	N/A	N/A	52.0	N/A	N/A	2013	YES	Erosion of natural deposits; Leaching
Radioactive Contaminants									
Alpha Emitters	pCi/L	0	15	2.8	N/A	N/A	2001 Next testing 2014	YES	Erosion of natural deposits.
Radium (combined 226/228)	pCi/L	0	5	0.3	N/A	N/A	2001 Next testing 2014	YES	Erosion of natural deposits.
Contaminants	**Units**	**MCLG**	**Action Level (AL)**	**Your Water**	**# Samples Exceeding AL**		**Sample Date**	**In Compliance**	**Typical Sources**
Inorganic contaminants									
Copper - Homeowners Taps.	ppb	0	1300 *	44.0	0		2013 Next testing 2016	YES	Corrosion of household plumbing systems. Erosion of natural deposits.
Lead - Homeowners Taps.	ppb	0	15 **	1.1	0		2013 Next testing 2016	YES	Corrosion of household plumbing systems. Erosion of natural deposits.

* Copper Action Level = 90 percentile or 9 out of 10 homes tested must show a concentration equal to or lower than 1300 **ppb**.

** Lead Action Level = 90 percentile or 9 out of 10 homes tested must show a concentration equal to or lower than 15 **ppb**.

- **MCLG = Maximum Contaminant Level Goal:** 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.
- **MCL = Maximum Contaminant level:** The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLG as feasible using the best available treatment technology.
- **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.
- **ppb:** parts per billion, same as micrograms per liter (µg/L).
- **ppm:** parts per million, same as milligrams per liter (mg/L).
- **MRDLG = Maximum Residual Disinfection 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.
- **MPL = Maximum Permissible Level:** State assigned level (example = Sodium)
- **N/A:** Not applicable
- **pCi/L:** picocuries per liter (a measure of radioactivity).
- **ND or Not Detected:** Not detected
- **NR:** Monitoring not required, but recommended.