



2016 Annual Water Quality Report

Holland Board of Public Works

Zero Violations in 2016

The Holland Board of Public Works (HBPW) delivers high quality drinking water. This annual water quality report is our opportunity to explain to you exactly what that means. Included in this report are the results of our continual water testing for more than 200 water constituents during the 2016 calendar year, information about the water source, treatment, monitoring and more.

Formally known as the Consumer Confidence Report, this document meets a Federal regulation passed by the U.S. Environmental Protection Agency (EPA) as part of the 1996 Safe Drinking Water Act Amendments, which require many actions to protect drinking water and its sources. The EPA, state regulators, and water providers work together to meet the national health-based standards for drinking water, which protect consumers against naturally-occurring and man-made contaminants.

The Michigan Department of Environmental Quality (MDEQ) oversees water systems in our state, ensuring contaminant testing, reviewing plans for water system improvements, conducting on-site inspections and sanitary surveys, and providing training and technical assistance.

The Holland Water Treatment Plant had no violations of any drinking water quality parameter in 2016 and continues to exceed strict water quality standards since the facility began operations in 1957. The contaminants that were detected were all well below the EPA's allowable levels.



Water Quality Data Report for 2016 of the EPA's regulated and unregulated contaminants



What you should know about contaminants that may be present in untreated water



Lead and your drinking water. We're committed to keeping you and your family safe.

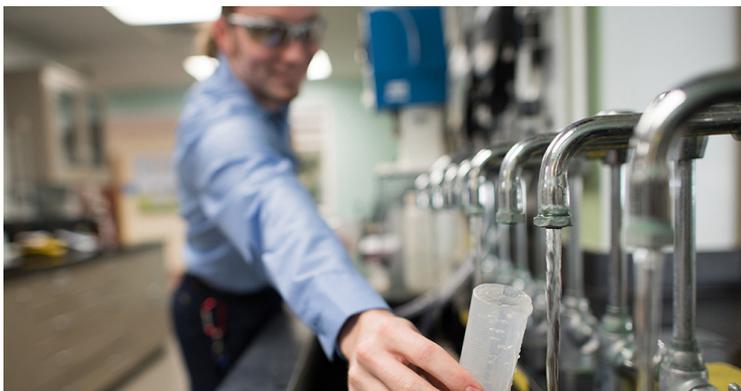
Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien.

Exceeding Standards

Delivering High-Quality Water to BPW Customers

Around the Clock Testing

ONCE PER HOUR, 24/7



Water quality is continuously monitored and tested once per hour in our state certified lab. Incoming water quality fluctuates based on the conditions of our source, Lake Michigan.

One of many ways we maintain water quality is through our innovative computer model, which guides us on how best to treat that water at any point in time. This modeling helps optimize chemical addition and allows us to act quickly as incoming water quality changes. Holland BPW was an early adopter of this technology.

SOURCE WATER ASSESSMENT

The Federal Safe Drinking Water Act, amended in 1996, requires states to develop and implement source water assessment programs to analyze existing and potential threats to the quality of public drinking water throughout the state. The State of Michigan performed a Source Water Assessment of the Holland BPW's water source, Lake Michigan, in 2003 to determine the susceptibility or relative potential for contamination. The susceptibility rating is on a six-tiered scale ranging from "very-low" to "high" based primarily on geologic sensitivity, water chemistry and contamination sources. The State rated the HBPW's intake as "moderately sensitive" and the source water as having a "moderately high" susceptibility to contamination. The State identified 364 potential sources of contamination within the total watershed of 175 square miles that could impact our water source. The report further states, "Historically, the Holland Board of Public Works Water Treatment Plant has effectively treated this water source to meet drinking water standards. There have been no detections of synthetic or volatile organic contaminants in the system's raw water." A copy of the full report can be obtained by calling HBPW at 616.355.1500.

Exceeding Standards

Delivering High-Quality Water to BPW Customers

SWIPP

SOURCE WATER INTAKE PROTECTION PROGRAM



Holland BPW has an award-winning Source Water Intake Protection Plan (SWIPP) in place. This is a voluntary effort encouraged by the EPA and MDEQ. The plan outlines community-wide actions and efforts to protect drinking water sources.

Proud Members

OF WATER FOUNDATIONS AND ASSOCIATIONS



American Water Works
Association



Holland BPW is a member of the Water Research Foundation and the American Water Works Association, with staff actively involved in the Michigan section. Water provided by Holland BPW surpasses all federal and state drinking water standards.

Cross Connections Control Program

What You Should Know

What You Should Know

HOLLAND BPW'S CROSS CONNECTION PROGRAM



Holland BPW operates a Cross Connection Control program in accordance with the Safe Water Drinking Act. A cross connection is when non-potable water comes in contact with the public water supply, which can contaminate the drinking water system through backsiphonage, backpressure or both. Backsiphonage can occur when the pressure in the public distribution system drops. Normally, this pressure is high enough to prevent backflow, but certain events such as water main breaks, directional flushing or firefighting can lower the pressure enough to allow water to flow backwards. Backpressure can occur when the pressure in a private water system is higher than the city's water system and can be caused by a privately owned pump being used to increase pressure inside a single structure.

Examples of Cross Connections include: 1) A faucet connected to a hose lying in a bucket of dirty water 2) A water pipe connected to a boiler treated with chemicals

By law*, it is the customer's responsibility to install and maintain backflow prevention devices and the water utility's responsibility to ensure its customers comply with these requirements. Holland BPW regularly inspects customer water supply piping to determine whether cross connection hazards exist.

Your Water Treatment Staff

Who They Are & What They Do

Water Treatment Plant Staff

AT EACH STEP, HBPW WATER TREATMENT STAFF MAKE SURE THE TREATMENT SYSTEM IS WORKING PROPERLY.



Pictured, left to right: Jack Hughes, Andrew Reynolds, Mike Helder, Benjamin VanderHulst, Joe Ortquist, Tina Pawlak, Ross De Vries, Tommy Bouatic, Jim Van De Wege, Chris Geiger. Not pictured: Dave Broene, Hank Burmeister, Jeremy Caron, Rick Den Bleyker.

Operators who are trained and licensed by the state continually monitor the entire process so that you have a reliable supply of safe drinking water.

In-plant samples of the treated water are collected throughout the day and night. Samples of the treated water are regularly collected from various locations throughout the distribution system and are analyzed to ensure the highest quality water for you.

Water Distribution Staff

MEET THE DISTRIBUTION CREW THAT MAINTAIN OUR PIPES AND KEEPS THE WATER FLOWING.



Pictured, left to right: Rachel Merz, Kyle Jurries, JR Flores, Miles Hunsinger, Rocky Clay, Travis Tibbetts, Matt Johnson, Brian Sybesma, Steve Ryan, William Wynes, Darin Emelander, RB Harrison, Mike Levandoski. Not pictured: Kevin Koning, John Crumb, Jonathan Abbott, Scott DeFeyter, Brian Quillian, Bryan Sybesma, Dave Cyrus and Mark Gipson.

The water distribution staff maintain 2,820 valves, 251.88 miles of water lines, and 2,395 hydrants that supply water to more than 13,000 homes and businesses throughout Holland.

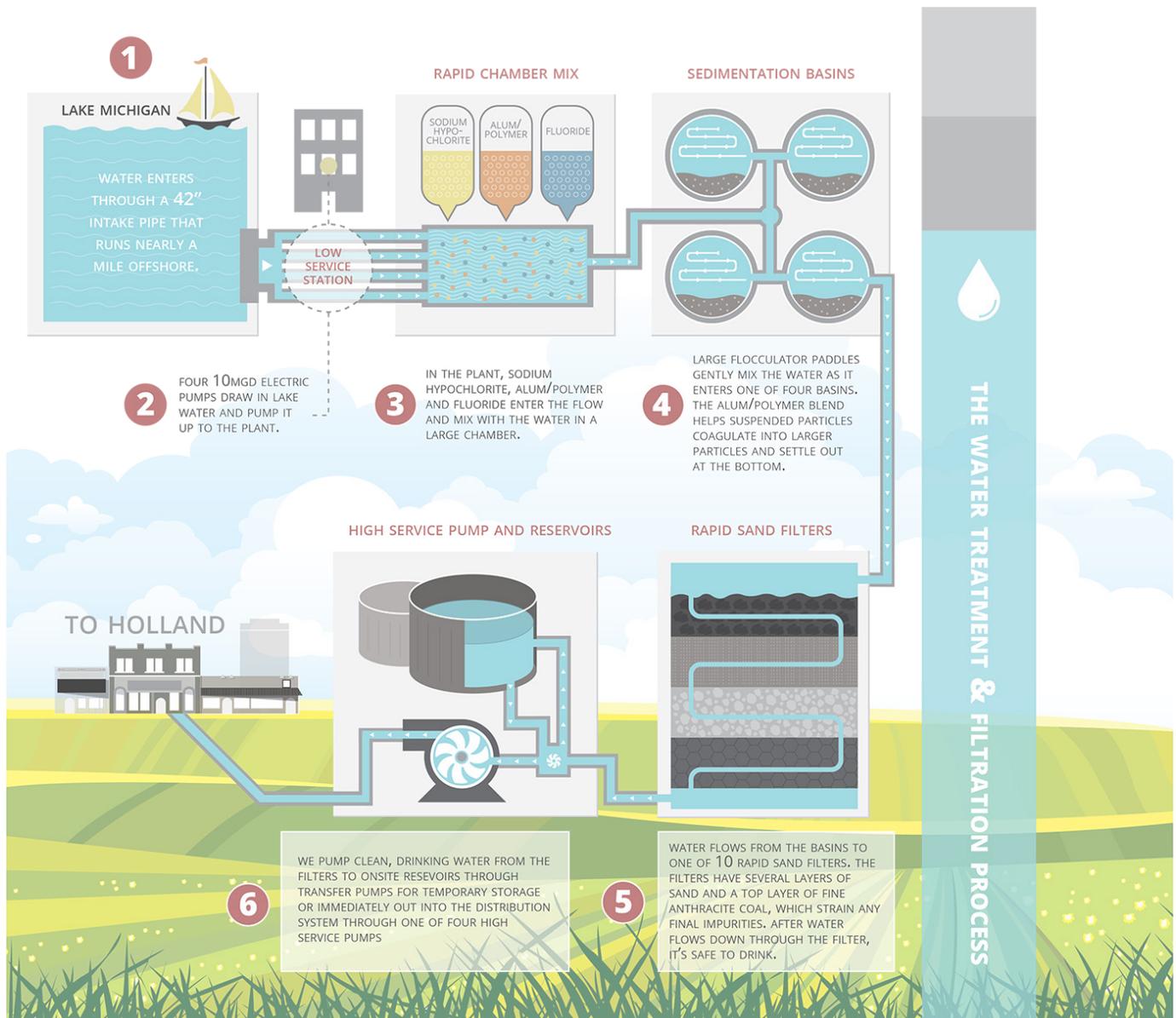
Maintaining the directional flushing program, testing and replacing hydrants, maintaining pumping stations and providing emergency services such as repairing burst pipes and broken backflow preventors all fall within Holland BPW's water distribution department.

Your Drinking Water

How We Make Sure It's Safe and Tastes Great

How It's Treated and Monitored

THE WATER TREATMENT AND FILTRATION PROCESS



Water Quality Results

For 2016

Test Results Water Quality Data Report for 2016

Water Quality Data Report for 2016

Substance (Units)	Highest Level Detected	EPA's MCL	EPA's MCLG	Violations	Range of Detection
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Regulated at the Water Treatment Plant

Fluoride (ppm)	0.86	4.00	4.00	None	0-0.86
Nitrate (ppm)	0.90	10	10	None	0.40-0.90
Turbidity (NTU)	0.30	1.0	N/A	None	0.01-0.30
Total Organic Carbon (TOC)	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 quarter and because the level is low, there is no requirement for TOC removal.				

Regulated at the Customer's Tap

Copper (ppm)	0.03	1.30	1.30	None	0-0.15
Distribution	90th Percentile	Action Level			
Lead (ppb)	0	15	0.00	None	0-27
Distribution	90th Percentile	Action Level			
Tested 8/2016					

Regulated in the Distribution System

Chlorine Residual (ppm) Highest Cl ₂ Running Annual Average = 0.74	1.39	4.0 MRDL	4.0 MRDLG	None	0.02-1.39
Total Trihalomethanes [ppb] Highest TTHM Local Running Annual Average=52	62	80	0	None	34-62
Halo Acetic Acids [HHA] (ppb) (Highest Local HAA Running Annual Average=20)	30	60	None	None	6-30
Total Coliform Bacteria	0	<5%	0%	None	0

Unregulated Contaminants

These are contaminants for which the EPA has not established drinking water standards. The purpose of the unregulated contaminant monitoring is to assist the EPA in determining the occurrence of unregulated contaminants in drinking water.

Sodium (ppm)	13	Not Regulated	Not Regulated	None	9-13
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The Holland BPW performed additional testing for other unregulated contaminants; no detections were found. Results of these 2016 tests are available by contacting the HBPW Water Treatment Plant at 616.355.1589.

A close-up photograph of white industrial machinery, likely part of a water filtration or treatment system, with various pipes and circular components.

Water Quality Results

For 2016

Test Results

WATER QUALITY DATA REPORT FOR 2016

Holland Board of Public Works is committed to providing safe, dependable, quality drinking water 24 hours a day, 365 days a year. As a state certified microbiological laboratory, the Holland BPW's Water Treatment Plant, in conjunction with three independent laboratories, conducted over 50,000 tests for more than 200 contaminants in 2016.

Holland Board of Public Works sends samples of incoming water to an outside lab each month to test for the presence of cryptosporidium. Cryptosporidium is a protozoan parasite that is too small to be seen without a microscope. It is sometimes found in surface waters, especially during periods of storm water runoff. Those who are infected with this parasite may experience gastrointestinal illness. Holland BPW has not detected any cryptosporidium in the water supply.

WATER REPORT DEFINITIONS: INTERPRETING THE TEST RESULTS

90TH PERCENTILE: 90 percent of the samples were below the number listed. (Copper = 0.03ppm; Lead = 0ppb)

ACTION LEVEL (AL): The concentration of a contaminant, which if exceeded, triggers treatment or other requirements that a water system must follow.

MAXIMUM CONTAMINANT LEVEL (MCL): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the maximum contaminant level goal as feasible 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 risk to health. MCLGs allow for a margin of safety.

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.

MAXIMUM RESIDUAL DISINFECTANT LEVEL GOAL (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.

NEPHELOMETRIC TURBIDITY UNITS (NTU): A measurement of the clarity of water. The HBPW monitors it because it is a good indicator of the effectiveness of our filtration system.

PARTS PER MILLION (PPM), PARTS PER BILLION (PPB): The maximum contaminant level (MCL) means the maximum amount allowed for certain contaminants. MCLs are measured in either parts per million or parts per billion.

LISTED ARE SOME COMPARISONS TO HELP DEFINE THESE MEASUREMENTS:

ONE PART PER MILLION EQUALS:

One inch in 16 miles
One minute in two years
One cent in \$10,000
One ounce in 7,813 gallons

ONE PART PER BILLION EQUALS:

One inch in 16,000 miles
One second in 32 years
One cent in \$10 million
One ounce in 7,812,500 gallons



What You Should Know

About Contaminants That May Be In Untreated Water

What You Should Know

ABOUT CONTAMINANTS THAT MAY BE PRESENT IN UNTREATED WATER



Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some minerals and other constituents considered contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. Federal law requires that the highest level of any contaminant detected in our treated water be reported to you. Those results are listed in this document. Federal law also requires that we explain the contaminants that may be present in source water (untreated water), not just Lake Michigan which is the source for the Holland water system, but other types of source water as well. 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 expected to be in source (untreated) 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. Synthetic and volatile organic chemical contaminants, which are by-products of industrial processes and petroleum production, and can come from gasoline stations, urban storm water runoff, and septic systems. Radioactive contaminants, which can be naturally occurring or the result of oil and gas production and mining activities.

To ensure that tap water is safe to drink, the Environmental Protection Agency (EPA) prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide similar protection for public health.

More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline: 800.426.4791. The EPA requires HBPW to test tap water daily. The U.S. Food and Drug Administration examines bottled water only weekly.

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 for infections. These people should seek advice about drinking water from their health care providers. EPA/CDC (Centers 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 at 800.426.4791.

Lead and Your Drinking Water

What You Should Know

What You Should Know

LEAD AND YOUR DRINKING WATER



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. Holland BPW 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 two 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 at 1.800.426.4791 or at: <http://water.epa.gov/drink/info/lead>.

Contact Us

We're Happy to Help

Do You Have Questions?

CONTACT INFORMATION BELOW



Questions regarding this report should be directed to management staff at the Holland BPW Water Treatment Plant.

HOLLAND WATER TREATMENT PLANT

46 N. Lakeshore Drive
Holland, Michigan 49424
TELEPHONE: 616.355.1589

We welcome your comments and participation at our public board meetings at the HBPW Service Center, 625 Hastings Avenue, on the Monday (between the first and second Wednesday) of each month at 4:00 p.m. We recommend that you call to confirm the meeting time and date prior to attending or visit our website at hollandbpw.com for the exact date and time of the meetings.

TO REPORT A WATER EMERGENCY, CALL: 616.355.1500
TO ARRANGE A TOUR OF FACILITIES, CALL: 616.355.1697
FOR INFORMATION ON WATER CONSERVATION, VISIT WWW.HOLLANDBPW.COM
FOR THE EPA'S SAFE DRINKING WATER HOTLINE: 800.426.4791, WWW.EPA.GOV/OGWDW
AMERICAN WATER WORKS ASSOCIATION: 800.926.7337, www.awwa.org
FEDERAL EMERGENCY MANAGEMENT AGENCY 202.646.2500
500 C Street S.W.
Washington, D.C. 20472

Areas Served

Retail and Wholesale Water Customers

HBPW Water Customers

CITY OF HOLLAND, PORTIONS OF PARK, HOLLAND AND LAKETOWN TOWNSHIPS

