

# What is This Paper?

*The City of Defiance Water Division has prepared the following report to provide information to you, the consumer, on the quality of our drinking water. Included within this report is general health information, water quality test results, how to participate in decisions concerning your drinking water and water system contacts. Please share this information with other water consumers, such as renters and customers, who may not have received a copy of this report by mail.*

*The City of Defiance is currently operating under a yellow (Conditional) license from the Ohio EPA. This is due to the failure to maintain compliance for disinfection byproducts at the most extreme locations of our system. We are currently negotiating our Findings and Orders for that non-compliance. Our Public Water System Identification (PWSID) is OH2000111 and is valid until January 30, 2021*



Este informe contiene información importante acerca de su agua potable. Haga que alguien lo traduzca para usted, o hable con alguien que lo entienda.

## How Do I Get Involved?

You are invited to attend the City Council meetings to voice your concerns about your drinking water. City Council Meetings are open to the public and are held at 631 Perry Street on the first, second, and fourth Tuesdays of each month at 7:00 pm.

You can also help by keeping the streams and rivers clean and reporting any potential spills or pollution sources. Accidental or unauthorized releases of contaminants to the air, land or water such as spills, releases, intentional dumping or emissions can be reported to Ohio EPA 24-hour EMERGENCY RESPONSE hotline at 800-282-9378. You can also call the Water Treatment Plant at 419-782-1886.

## Need More Information?

If you would like more information on water in Defiance or if you would like to get a small group together (friends, family, church, school, 4-H, or whatever) and take a tour of the Water Treatment Plant, then call us for information. Administrative office hours are Monday- Friday 8am-4pm.

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For more information about water related issues, please visit the following sites online:

Ohio EPA Public Interest Center at:  
[www.epa.state.oh.us/pic/](http://www.epa.state.oh.us/pic/)  
American Water Works Association at:  
[www.drinktap.org/consumerdnn/](http://www.drinktap.org/consumerdnn/)



# City of Defiance Water Treatment Division

# 2019 Annual Water Quality Report

In 2019, the Water Plant treated nearly 1.2 billion gallons of water, with an average daily flow of 3.06 million gallons per day (mgd). This was slightly higher than 2018. Our peak daily flow was 5.61 mgd which was significantly higher than the previous year when our peak was only 4.55 mgd. The distribution system delivers the treated water to City of Defiance customers and the surrounding area through more than 111 miles of waterlines. Defiance also supplies water to Christi Meadows, Brunersburg, and Ayersville. Customers in these satellite systems should receive a report similar to this from their system managers.

### **Violations & Enforcement Actions**

The Defiance Water Division had a violation in each quarter (4) of 2019 for exceeding the Maximum Contaminant Level for Total Trihalomethanes (TTHMs). This exceedance has occurred at one of our four sampling sites and is primarily a result of excessive water age. Public notices were mailed out at that time for each of these occurrences explaining the cause and what the possible concerns might be. To eliminate these problems the City has begun the design process for an Activated Carbon System. This will reduce the amount of naturally occurring organic matter in the treated water and will reduce the formation of these compounds in the distribution system. Unfortunately, due to the scale of the design and construction of this system, it will not likely be online until early 2022. We continue to try to flush the line that is in violation but have yet to be able to get the TTHM levels low enough on this line for compliance. Due to this inability to reach compliance, Defiance City is under Findings and Orders from the Ohio EPA.

### **Where Does My Water Come From?**

Defiance uses surface water from the Maumee River and the Upper Maumee Watershed. An estimated 57% of Ohio's population gets its drinking water from surface water sources. Water from the Maumee River is pumped to the reservoir located on Precision Way. Here the water has a chance to settle, which allows the reservoir to act as a pretreatment basin that provides the water plant with more consistent raw water quality. This also creates an isolated source of supply during times when large amounts of silt and other contaminants such as nitrates, phosphorus, and ammonia can be washed into the river making the water hard to treat. The water then flows by gravity to the water plant for treatment.

During the summer of 2019 the Defiance Reservoir experienced a short period of time (approximately 2 weeks) where microcystin (an algal toxin) was detected in routine sampling. While sampling verified that existing

treatment adequately removed all these toxins, it did necessitate the completion of a study by outside consultants and submission of that to the Ohio EPA for verification of the treatment plant's capabilities for toxin removal. This was completed to establish our existing capabilities for toxin removal. This study also recommended the installation of the Granular Activated Carbon System and design for this is currently underway.

### **Source Water Assessment and Watershed Protection**

For the purposes of source water assessments, all surface waters are considered to be susceptible to contamination. By their nature surface waters are accessible and can be readily contaminated by chemicals and pathogens, with relatively short travel times from source to the intake. Based on the information compiled for the Source Water Assessment, the City of Defiance drinking water source protection area is susceptible to agricultural runoff (animal feedlots, pesticide/fertilizer storage and application), industrial and commercial sources, junkyards, above ground storage tanks, home construction runoff, oil and gas production activities, unsewered areas, and wastewater treatment plant discharges.

The City of Defiance's Public Water System treats water to meet drinking water quality standards, but no single treatment technique can address all potential contaminants. The potential and quantity of raw water contamination can and should be addressed by implementing measures to protect the Maumee River. More detailed information is provided in the City of Defiance's Drinking Water Source Assessment Report. This report is available at;

<http://www.wapp.epa.ohio.gov/gis/swpa/OH2000111.pdf>

This report has just gone under an extensive revision and is available for review. Copies can be requested by contacting the City of Defiance Water Superintendent.

The City of Defiance is currently working with the Upper-Maumee Watershed Partnership, which is a group of local agencies, businesses and citizens concerned about protecting the environment and our source of drinking water. If you are interested in participating or just learning more, contact the Defiance Water Plant at 419-782-1886, or the Defiance County Soil and Water Conservation District Office at 419-782-8751.

### **What are Some Sources of Contamination to Drinking 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: (A) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife; (B) 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; (C) Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses; (D) 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; (E) 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, USEPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. 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 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 Federal Environmental Protection Agency's Safe Drinking Water Hotline (1-800-426-4791).

### **Who Needs to Take Special Precautions?**

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 infection. 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 (1-800-426-4791).

## Specific Contaminant Information

### Total Trihalomethanes (TTHM's)

Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems and may have an increased risk of getting cancer.

### Turbidity

Turbidity is a measure of the cloudiness of water and is an indication of the effectiveness of our filtration system. The turbidity limit set by the EPA is 0.3 NTU in 95% of the daily samples and shall not exceed 1 NTU at any time. As reported in the Table, the Defiance WTP highest recorded turbidity result for 2019 was 0.27 NTU and lowest monthly percentage of samples meeting the turbidity limits was 100%. This means all samples in 2019 met compliance for turbidity.

### Lead Educational Information

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. Defiance WTP 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 at 800-426-4791 or at <http://www.epa.gov/safewater/lead>.

### About your drinking water

The EPA requires regular sampling to ensure drinking water safety. The Defiance WTP Staff collected and ran 10's of thousands of samples for operational control as well as bacterial, inorganic, radiological, synthetic organic, and volatile organic contaminants during 2019. Samples were collected for over 75 different contaminants most of which were not detected in the Defiance City water supply. The Ohio EPA requires us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though accurate, may be more than one year old.

## Unregulated Contaminants

Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted. The following table details only the contaminants that had detectable levels. For more information about what contaminants were sampled for, please contact the water treatment plant at (419)782-1886

Table of Unregulated Contaminants

Contaminants (Units)	Sample Year	Average Level Found	Range of Detections
Manganese	2019	0.604	0-0.958
Haleoacetic Acids (HAA5) (ppb)	2019	20.8	13.3-33.5
Haleoacetic Acids (HAA6br) (ppb)	2019	9.5	5.44-17.8
Haleoacetic Acids (HAA9) (ppb)	2019	29.1	19.5-44.7
Bromide (raw water) (ppb)	2019	45.4	39.1-50.1
TOC (raw water) (ppm)	2019	6.6	6.3-6.9

### Red Water/ Taste and Odor Issues

From time to time, rust from the inside old iron water mains or from your plumbing may be dislodged by high flow this can lead to a red color in drinking water. Also, during certain times of year, taste and odor problems may occur due mainly to algae in the raw water supply. Defiance Water is working hard to control and eliminate these problems from our water. If you have questions or concerns about your water, contact the water treatment plant at 419-782-1886.

### Definitions of some terms contained within this report.

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 Contaminant level (MCL): The highest level of contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

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 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.

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

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

Microcystins: Liver toxins produced by a number of cyanobacteria. Total microcystins are the sum of all the variants/congeners (forms) of the cyanotoxin microcystin.

Cyanobacteria: Photosynthesizing bacteria, also called blue-green algae, which naturally occur in marine and freshwater ecosystems, and may produce cyanotoxins, which at sufficiently high concentrations can pose a risk to public health.

Cyanotoxin: Toxin produced by cyanobacteria. These toxins include liver toxins, nerve toxins, and skin toxins. Also sometimes referred to as "algal toxin".

Parts per Million (ppm) or Milligrams per Liter (mg/L) are units of measure for concentration of a contaminant. A part per million corresponds to one second in a little over 11.5 days.

Parts per Billion (ppb) or Micrograms per Liter (µg/L) are units of measure for concentration of a contaminant. A part per billion corresponds to one second in 31.7 years.

The "<" symbol: A symbol which means less than. A result of <5 means that the lowest level that could be detected was 5 and the contaminant in that sample was not detected.

Picocuries per liter (pCi/L): A common measure of radioactivity.

Lead threshold level the concentration of lead in an individual tap water sample. Currently established by the OEPA at 15 ppb.

Non-Detect (ND) the level present, if any, is below the reliable detection limit of the approved method of testing.

Not Applicable (N/A) does not apply to this section.

**Detected Regulated Contaminants Table City of Defiance**

Contaminants (Units)	MCLG	MCL	Level Found	Range of Detection	Violation Yes/No	Year Sampled	Typical Sources of Contaminants
<b>Microbiological Contaminants</b>							
Turbidity (NTU)	N/A	TT	0.27	0.01-0.27	No	2019	Soil Water Runoff
Turbidity (% Samples meeting standard)	N/A	TT=95%	100%	100%	No	2019	
Total Organic Carbon (TOC)	TT	N/A	2.2	2.0-3.0	No	2019	Naturally present in the environment
The value reported under "Level Found" for TOC is the lowest ratio between percentage of TOC actually removed to the percentage of TOC required to							
<b>Inorganic Contaminants</b>							
Fluoride (ppm)	4	4	0.98	0.810-1.13	No	2019	Erosion of natural deposits; Water additive which promotes strong teeth
Nitrate (ppm)	10	10	2.18	0.16-2.18	No	2019	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Barium (ppm)	2	2	0.0420	0.0420	No	2019	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
<b>Volatile Organic Contaminants</b>							
Total Trihalomethanes (TTHM) (ppb)	N/A	80	86.58	40.0-106.9	Yes	2019	By-product of drinking water chlorination
Haloacetic Acid (HAA5) (ppb)	N/A	60	32.3	20.1-36.0	No	2019	By-product of drinking water chlorination
<b>Residual Disinfectant</b>							
Total Chlorine (ppm)	MRDLG=4.0	MRDL=4.0	1.52	0.8-2.3	No	2019	Water additive used to control microbes.
<b>Lead &amp; Copper</b>							
Contaminants	Action Level	Individual Results over AL	90% of test samples were less than	Violation	Year Sampled	Typical Source Of Contamination	
						Lead (ppb)	Copper (ppm)
	15	N/A	<2.0	No	2019	Corrosion of household plumbing systems; Erosion of natural deposits.	
1 out of 60 samples were found to have lead levels in excess of the Action Level of 15 ppb.							
	1.3	N/A	0.069	No	2019	Corrosion of household plumbing systems; Erosion of natural deposits.	
0 out of 60 samples were found to have copper levels in excess of the Action Level of 1.3 ppm.							
<b>Synthetic Organic Contaminants including Pesticides &amp; Herbicides</b>							
Atrazine (ppb)	3	3	0.15	0.07-0.07	No	2019	Runoff from herbicide used on row crops.
Simazine (ppb)	4	4	<0.05	<0.05	No	2019	Runoff from herbicide used on row crops.