

POSTAL CUSTOMER
DEFIANCE, OHIO 43512



2006 Annual Water Quality Report



Defiance Water Division

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PLEASE READ THIS BROCHURE CAREFULLY. IT CONTAINS INFORMATION YOU NEED TO KNOW ABOUT YOUR WATER.

The Defiance Water Division is pleased to present this summary of the quality of the water provided to you during the past year. We will explain where your water comes from and what it contains. Last year, your tap water met all U.S. Environmental Protection Agency and state drinking water standards with the exception of Nitrates. This report will explain what happened and what we are doing to correct this problem.

In 2006, the Water Division treated 1.37 billion gallons of Maumee River water and pumped it into the distribution system. The distribution system delivers the treated water to City of Defiance customers and the surrounding area which includes Christi Meadows, Brunersburg and Ayersville. These satellite systems should receive a report similar to this from their system managers. Approximately 9,250 copies of this report will be printed and mailed this year.

Included within this report is general health information, water quality test results, how to participate in decisions concerning your water and water system contacts.

About Your Drinking Water

The EPA requires regular sampling to ensure drinking water safety. The City of Defiance Water Division conducted sampling for bacteria, inorganic, radiological, synthetic organic and volatile organic contaminate during 2006. Samples were collected for a more than 100 different contaminants, most of which were not detected in Defiance water supply. Listed on the chart in this brochure is information on those contaminants that were found in the City of Defiance water during 2006. The Ohio EPA requires systems 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, are more than one year old.

The Defiance Water Plant had an MCL Violation for Nitrate during the month of May, 2006. Defiance has not had a Nitrate violation since June of 2003. Information about the violation was released by multiple media sources. Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and if untreated, may die. Symptoms include shortness of breath and blue-baby syndrome. Defiance is constructing a new reservoir which will allow the treatment plant to avoid pumping from the Maumee River during periods of high Nitrates, or other contaminants, in the river water.

By the time you receive this report, construction of the new Reservoir for pretreatment of our raw water supply will have begun. The reservoir will have a surface area of about 74 acres and will hold approximately 350 million gallons of water. At our current usage, that would be about a 90 day supply. This reservoir will allow us to pretreat the raw water to reduce organics and will provide a more consistent water quality to the treatment plant. The reservoir will also give Defiance an alternate supply of water during times when the river may be high in contaminants such as nitrates. This will help ensure that Defiance Water will be able to meet the water quality standards as set by the Environmental Protection Agency. Construction is expected to be completed by November of 2007.

***Este informe contiene informacion muy sobre la calidad de su agua beber.
Traduscalo o hable con alguien que lo entienda bien.***

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. Currently, the water plant pulls water directly from the river and into the plant.

Occasionally, such as during periods of high rain, large amounts of silt and other contaminants such as Nitrates can be washed into the river making the water hard to treat. To correct this problem, the City of Defiance will be constructing a reservoir, which can be used as a pretreatment basin or as an alternate source of supply. This will help the water plant to provide better quality water and should eliminate problems such as nitrates in the future.

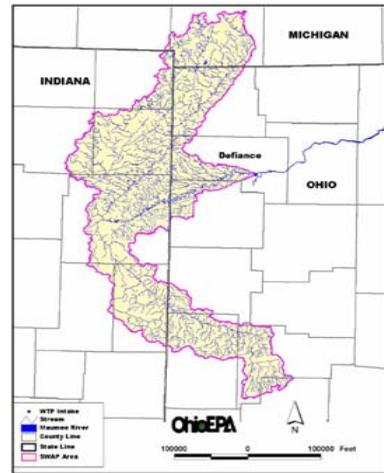
Source Water Assessment

The City of Defiance public water system uses surface water drawn from an intake on the Maumee River. For the purposes of source water assessments, in Ohio all surface waters are considered to be susceptible to contamination. By their nature, surface waters are readily accessible and can be contaminated by chemicals and pathogens which may rapidly arrive at the public drinking water intake with little warning or time to prepare.

The City of Defiance's drinking water source protection area (see map) contains potential contaminant sources such as agriculture, home construction, industrial and commercial businesses, septic systems, wastewater treatment plants, roadways and railroads.

The City of Defiance's public water system treats the water to meet drinking water quality standards, but no single treatment tech-

nique can address all potential contaminants. The potential for water quality impacts can be further decreased by implementing measures to protect the Maumee River.



More detailed information is provided in the City of Defiance's Drinking Water Source Assessment report. Requests for a copy of the 21 page report must be made in writing to the City of Defiance Water Superintendent.

What are the Sources of Contamination 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

All public water systems are now beginning work on the next phase of the Long-Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR). The goal of this rule is to reduce the risk of disease caused by Cryptosporidium and other microorganisms by identifying the systems at the greatest risk for source water contamination.

One of the parts of this rule is the Initial Distribution System Evaluation (IDSE). This evaluation will look at water flow in the distribution system and how it affects water quality. Some of the parameters that will be evaluated are turbidity, chlorine demand, trihalomethanes (TTHM's) and haloacetic acids(HAA5). The goal of this rule is to obtain a substantial reduction in disinfection byproducts such as TTHM's.

Another important study that will be completed is Source Water Monitoring. This study will require water plants to monitor for Cryptosporidium, E. coli and turbidity in the raw water supply for a period of two years.

The EPA will evaluate the results from these studies to determine if additional treatment may be required. If changes to our existing

treatment is required, those changes will need to be completed before October 1, 2013.

Call OUPS Before You Dig

IF you are planning to dig in the Defiance area, contact the Ohio Utilities Protection Services (OUPS) at 800-362-2764 at least 48 hours before beginning to dig. OUPS will contact the utility company's in the area so they can mark any

buried utilities in your area. You can find more information on the OUPS website at www.oups.org.



Would You Like a Tour?

If you would like to take a tour of the Water Treatment Plant, get a small group together (friends, family, church, school, 4-H, bowling team, or whatever) and call Water Superintendent Richard Kipp at 419-782-1886 to schedule a date and time.

Top 10 Reasons to Drink Water

1. Water is absolutely essential to the human body's survival. A person can live for about a month without food, but only about a week without water.
2. Water helps to maintain healthy body weight by increasing metabolism and regulating appetite.
3. Water leads to increased energy levels. The most common cause of daytime fatigue is actually mild dehydration.
4. Drinking adequate amounts of water can decrease the risk of certain types of cancers, including colon cancer, bladder cancer, and breast cancer.
5. For a majority of sufferers, drinking water can significantly reduce joint and/or back pain.
6. Water leads to overall greater health by flushing out wastes and bacteria that can cause disease.
7. Water can prevent and alleviate headaches.
8. Water naturally moisturizes skin and ensures proper cellular formation underneath layers of skin to give it a healthy, glowing appearance.
9. Water aids in the digestion process and prevents constipation.
10. Water is the primary mode of transportation for nutrients in the body and is essential for proper circulation.

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/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).

Water Usage

Toilet Flushing is by far the largest single use of water in your home. Each flush uses 4 to 6 gallons of water. Here are typical percentages of water use for a family of four:

- Toilet flushing—40%
- Dishwashing—6%
- Bath/Shower—32%
- Cooking/Drinking—5%
- Laundry—14%
- Bathroom Sink—3%

Backflow and Cross-Connection

According to Ohio EPA Rule 3745-95-04 paragraph (A) “An approved backflow prevention device shall be installed on each service line to a consumer's water system serving premises, where in the judgment of the supplier of water or the director, a pollutional, system, health or severe health hazard to the public water system exists.”

The Water Division currently has over 1,200 commercial and industrial backflow prevention devices listed in a database. The Ohio EPA requires these devices to be tested an-

nually by the a certified tester. A copy of the test report is to be sent to the Defiance Water Division.

Thermal Expansion

When water is heated in a closed system it expands. For example, water heated from 90°F to a thermostat setting of 140°F in a 40 gallon hot water heater will expand by almost one-half gallon. Water is not compressible, therefore, the additional water volume created has to go someplace. Without an expansion tank, the water heater may be distorted by the expanding water. This could severely damage a water heater.

When an expansion tank is installed the excess water enters the pre-pressurized tank, thereby protecting the plumbing.

The Ohio Plumbing Code, Section 607.3.2, states, “Where a backflow prevention device, check valve or other device is installed on a water supply system utilizing storage water heating equipment such that thermal expansion causes an increase in pressure, a device for controlling pressure shall be installed.”

Hot Water Tank Maintenance

We Recommend flushing hot water tanks periodically because over time, your tank can accumulate sediment and various mineral deposits. This buildup can reduce the amount your water tank holds, reducing the efficiency of your unit. Consult the manufacturer of your water tank for proper maintenance or troubleshooting.

Future Concerns and Actions

Presently, the Water Division is working on several options to ensure that future water quality violations do not occur. These options include treatment chemical changes, operational improvements, and the construction of an above ground reservoir for pre-treatment.

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 byproducts 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, EPA 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 Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

Specific Contaminant Information

Some people who drink water containing fluoride well in excess of the MCL over many years could get bone disease, including

pain and tenderness of the bones. Children may get mottled or discolored teeth.

Some people who drink water containing Trihalomethanes (TTHM's) 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.

Some people who drink water containing atrazine well in excess of the MCL over many years could experience problems with their cardiovascular system or reproductive difficulties.

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 in 95% of the daily samples and shall not exceed 1 NTU at any time. As reported on the contaminate table, the Defiance Water Plants highest recorded turbidity result for 2006 was 0.22 NTU and lowest monthly percentage of samples meeting the turbidity limits was 100%.

Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the Safe Drinking Water Hotline (800-426-4791).

During 2006, the Defiance Water Plant produced 1,372,560,000 gallons of potable water.

2006 TEST RESULTS FOR CITY OF DEFIANCE WATER DEPARTMENT							
Contaminants (Units)	MCLG	MCL	Level Found	Range of Detection	Violation Yes/No	Year Sampled	Typical Sources of Contaminants
Microbiological Contaminants							
Turbidity (NTU)	N/A	TT	0.22	0.04-0.22	No	2006	Soil Water Runoff
Turbidity (% Samples meeting standard)	N/A	TT=95%	100%	100%	No	2006	
Total Organic Carbon (TOC)	TT	N/A	2.50%	2.1-3.2	No	2005	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 be removed. A value of greater than one (1) indicates that the water system is in compliance with TOC removal requirements. A value of less than one (1) indicates a violation of the TOC removal requirements.							
Residual Disinfectants							
Total Chlorine (ppm)	MRDL=4	MRDL=4	1.5	0.4-2.5	No	2006	Corrosion of household plumbing systems; Erosion of natural deposits.
Inorganic Contaminants							
Copper (ppm)	1.3	AL = 1.3	0.06	0 - 0.08	No	2004	Corrosion of household plumbing systems; Erosion of natural deposits.
Lead (ppb)	0	AL = 15	<5	0.0 - 94.5	No	2004	Corrosion of household plumbing systems; Erosion of natural deposits.
Two out of thirty samples were found to have lead levels in excess of the lead action level of 15ppb.							
Fluoride (ppm)	4	4	1.07	0.69-1.30	No	2006	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate (ppm)	10	10	11.5	0.6 - 11.50	Yes	2006	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Barium (ppm)	2	2	0.02	0.02	No	2006	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Synthetic Organic Contaminants including Pesticides & Herbicides							
Atrazine (ppb)	3	3	15	<0.3 - 15.0	Yes	2006	Runoff from herbicide used on row crops.
Volatile Organic Contaminants							
Total Trihalomethanes (TTHM) (ppm)	N/A	0.08	0.07485	0.01340-0.1951	No	2006	By-product of drinking water chlorination
Haloacetic Acid (HAA5) (ppm)	N/A	0.06	0.042	0.015 - 0.1008	No	2006	By-product of drinking water chlorination
Bromoform (ppb)	N/A	N/A	8.3	N/A	No	2006	By-product of drinking water chlorination
Chloroform (ppb)	N/A	N/A	4.2	N/A	No	2006	By-product of drinking water chlorination
Bromodichloromethane (ppb)	N/A	N/A	7.5	N/A	No	2006	By-product of drinking water chlorination
Di Bromochloromethane (ppb)	N/A	N/A	11	N/A	No	2006	By-product of drinking water chlorination

Definitions of Some Terms Found 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. MCLG's allow for a margin of safety.

Maximum Contaminant Level (MCL): The highest level of 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.

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.

Parts per Million (ppm): Units of measure for concentration of a contaminant. A part per million corresponds to one second in approximately 11.5 days.

Parts per billion (ppb): Units of measure for concentration of a contaminant. A part per billion corresponds to one second in approximately 31.7 years.

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.

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.

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 the City Services Building at 631 Perry Street on Tuesdays at 7:30 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?
 For more information on water in Defiance or to schedule a group tour, please contact:
 Richard J. Kipp
 Water Superintendent
 1356 Baltimore Street
 Defiance, Ohio 43512
 Phone: 419-782-1886
 Fax: 419-782-6510
 Email: rkipp@cityofdefiance.com

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

- Ohio EPA Division of Drinking and Ground Water at: <http://www.epa.state.oh.us/ddagw/ddagwmain.html>

- Or the American Water Works Association, <http://www.awwa.org/Advocacy/learn/>