



# 2019 CONSUMER CONFIDENCE REPORT ON WATER QUALITY

Posted June 2020 – for the period of January 1 to December 31, 2019

## Introduction

The Purdue University West Lafayette campus water supply comes from the ground water aquifer known as the Wabash River Valley Aquifer (also known locally as the Teays River Valley Aquifer).

In the water quality report that follows, information is available about the source of drinking water, what it contains, and how it compares to Environmental Protection Agency (EPA) and Indiana Department of Environmental Management (IDEM) standards. As in years past, this report has been circulated campus wide and is available online.

The content of the report is as required under 327 IAC 8-2.1.

This report covers the period of January 1 to December 31, 2019 and is intended to provide information about your drinking water quality. For more information regarding this report, contact Chris Marks, Water Works Supervisor, at (765) 496-2705.

## Opportunity for Public Participation

Purdue University Water Works has joined together with Indiana American Water Company and the City of Lafayette to form a Local Area Planning Team for Wellhead Protection. This team of volunteers from the community is working hard to make sure the source of drinking water in the West Lafayette/Lafayette areas remains safe. Your participation in the Wellhead Protection Planning Team is welcomed. For more information on how you can play an active role in maintaining safe drinking water in your community, please contact (765) 496-2705 to join the Wellhead Protection Local Planning Team.

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## SOURCES OF DRINKING WATER

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and groundwater wells. As water travels over the surface of the land or through the ground, it can dissolve naturally-occurring minerals and naturally-occurring radioactive material and can pick up substances resulting from the presence of animals or from human activity. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants that may cause taste, color, or odor problems. 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 at (800) 426-4791.

Contaminants that may be present in source water include the following:

- 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 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.
- 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. Some people may be more vulnerable to contaminants in drinking water than the general population. Contaminants may be found in drinking water that may cause taste, color, or odor problems. These types of problems are not necessarily causes for health concerns. For more information on taste, odor, or color of drinking water, please contact the system's business office.

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. 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 (800-426-4791).

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## Water Quality Test Results

Definitions: The following tables contain scientific terms and measures, some of which may require explanation.

Averaging: Regulatory compliance with some MCLs are based on running annual average of monthly samples.

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

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

Maximum Contaminant Level Goal or 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 or MRDL: The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary to control microbial contaminants.

Maximum Residual Disinfectant Level Goal or 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.

MFL: Million fibers per liter (a measure of asbestos)

mrem/yr: Millirems per year (a measure of radiation absorbed by the body)

MRL: The lowest amount of an analyte in a sample that can be quantitatively determined with stated, acceptable precision and accuracy under stated analytical conditions.

na: Not applicable

pCi/l: Picocuries per liter

ppb: Micrograms per liter or parts per billion - or one ounce in 7,350,000 gallons of water

ppm: Milligrams per liter or parts per million - or one ounce in 7,350 gallons of water

ppt: Parts per trillion

ug/l: Micrograms per liter

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## COLIFORM BACTERIA

0	60	1.6	5% per month	0	N	Naturally present in the environment; may indicate a sanitation problem

Note: One sample on September 16, 2019 tested present for Coliform Bacteria. Repeat samples were absent.

## LEAD AND COPPER

Definitions: The following tables contain scientific terms and measures, some of which may require explanation.

Action Level Goal (ALG): The level of a contaminant in drinking water below which there is no known expected risk to health. ALGs allow for a margin of safety.

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

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. We are responsible for providing high quality drinking water, but we 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 [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).

Lead and Copper	Collection Date	MCLG	Action Level (AL)	90th Percentile	# Sites Over AL	Units	Violation	Likely Source of Contamination
Copper	2018	1.3	1.3	0.529	0	ppm	N	Erosion of natural deposits, leaching from wood preservatives; corrosion of household plumbing
Lead	2018	0	15	<1.0	0	ppb	N	Corrosion of household plumbing systems; erosion of natural deposits

Note: The EPA requires periodic testing of water from 30 sites of which 90% must test below the regulated action levels.

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## REGULATED CONTAMINANTS

Disinfectants and Disinfectant By-Products	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Distribution System Free Chlorine	2019	0.9	0.62 - 0.9	MRDLG=4	MRDL=4	ppm	N	Water additive used to control microbes
Total Haloacetic Acids (HAA5)	2019	6.0	6.0 - 6.0	No goal for the total	60	ppb	N	By-product of drinking water disinfection
Total Trihalomethanes (TTHM)	2019	5.7	5.5 - 5.7	No goal for the total	80	ppb	N	By-product of drinking water disinfection
Synthetic Organic Compounds	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Hexachlorocyclopentadiene	2018	0.18	0.18 - 0.18	50	50	ppb	N	Run off from pesticide use
Hexachlorobenzene	2018	0.10	0.10 - 0.10	0	1	ppb	N	Run off from fungicide use
Simazine	2018	0.18	0.18 - 0.18	4	4	ppb	N	Run off from herbicide use
Atrazine	2018	0.14	0.14 - 0.14	3	3	ppb	N	Run off from herbicide use
Lindane	2018	100	100 - 100	200	200	ppt	N	Run off from pesticide use
Heptachlor	2018	140	140 - 140	0	400	ppt	N	Run off from insecticide use
Heptachlor epoxide	2018	100	100 - 100	0	200	ppt	N	Run off from insecticide use
Endrin	2018	0.22	0.22 - 0.22	2	2	ppb	N	Run off from insecticide, rodenticide, piscicide use
Methoxychlor	2018	0.18	0.18 - 0.18	40	40	ppb	N	Run off from insecticide use
Benzo[a]pyrene	2018	100	100 - 100	0	200	ppt	N	Run off from coal burning facilities
Bis(2-ethylhexyl)adipate	2018	2.00	2.00 - 2.00	400	400	ppb	N	Discharge from industries
Bis(2-ethylhexyl)phthalate	2018	1.80	1.80 - 1.80	0	6	ppb	N	Discharge from industries and aircraft facilities
2,4-D	2018	0.26	0.26 - 0.26	70	70	ppb	N	Run off from herbicide use
Dalapon	2018	1.00	1.00 - 1.00	200	200	ppb	N	Run off from herbicide use
Dinoseb	2018	0.20	0.20 - 0.20	7	7	ppb	N	Run off from herbicide use
Pentachlorophenol	2018	0.040	0.04 - 0.04	0	1	ppb	N	Run off from herbicide use
Picloram	2018	0.70	0.70 - 0.70	500	500	ppb	N	Run off from herbicide use
2,4,5-TP	2018	0.20	0.20 - 0.20	50	50	ppb	N	Run off from herbicide use
Oxamyl	2018	2.0	2.0 - 2.0	200	200	ppb	N	Run off from pesticide use
Carbofuran	2018	0.90	0.90 - 0.90	40	40	ppb	N	Run off from pesticide use
Note: There was one additional organic tested for and was below the detection limit.								

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## REGULATED CONTAMINANTS

Inorganic Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Arsenic	2017	3.4	0 - 3.4	0	10	ppb	N	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Barium	2017	0.122	0.1 - 0.122	2	2	ppm	N	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chromium	2017	3.0	2.2 - 3.0	100	100	ppb	N	Discharge from steel and pulp mills; Erosion of natural deposits
Fluoride	2019	0.8	0.5 - 0.8	4	4	ppm	N	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Nitrate [measured as Nitrogen]	2019	1.9	<0.1 - 1.9	10	10	ppm	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Sodium	2017	16.8	7.2 - 16.8	No MCLG	No MCL	ppm	N	Naturally occurring; Runoff from road salt
Nickel	2017	8.0	2.2 - 8.0	100	No MCL	ppb	N	Nickel is a very abundant natural element. There is no MCL for nickel, but the EPA recommends that drinking water should contain less than 100ug/L.
Copper	2017	0.0058	0 - 0.0058	1.3 AL	1.3 AL	ppm	N	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Note: Seven additional inorganics were tested for and not detected.								
Radioactive Contaminants								
Beta/photon emitters	2016	2.7	1.8 - 2.7	0	4	mrem/yr	N	Decay of natural deposits and man-made deposits
Gross alpha excluding radon and uranium	2016	0.6	0.5 - 0.6	0	15	pCi/l	N	Decay of natural deposits
Uranium	2016	1.9917	1.2206 - 1.9917	0	30	ug/l	N	Erosion of natural deposits

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## UNREGULATED CONTAMINANTS

Unregulated contaminants are those for which the EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist the EPA in determining the unregulated contaminants in drinking water and whether further regulation is warranted.

Metals	Collection Date	Minimum	Maximum	Average	Samples were taken and analyzed for 35 unregulated contaminants. This table shows the minimum, maximum and average of the detected contaminants.
Manganese	2019	170	257	214	
Anions By Ion Chromstrgraphy	Collection Date	Minimum	Maximum	Average	
Bromide	2019	52.8	527	334.47	
Inorganics	Collection Date	Minimum	Maximum	Average	
Total organic carbon	2019	617	707	659.33	
Semi-volatile Organic Compounds	Collection Date	Minimum	Maximum	Average	
Dibromoacetic Acid	2019	0.966	1.45	1.2	
Chlorodichloroacetic Acid	2019	0.359	0.524	0.442	

## REVISED TOTAL COLIFORM RULE (RTCR)

The Revised Total Coliform Rule (RTCR) seeks to prevent waterborne diseases caused by E. coli. E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly and people with severely compromised immune systems.

Violation Type	Violation Begin	Violation End	Violation Explanation
Monitoring, Routine, Minor (RTCR)	05/01/2019	05/31/2019	We failed to test our drinking water for the contaminant and period indicated. Because of this failure, we cannot be sure of the quality of our drinking water during the period indicated.

Note: During the month of May 2019, 60 routine samples were taken to be analyzed for Coliform Bacteria. Of those, 10 samples were in transit too long to be analyzed.