Tuscarawas County Metropolitan Sewer District

ANNUAL WATER QUALITY REPORT FOR 2018

We are proud to present the following report to provide information to you, the consumer, on the quality of drinking water for each of our four public water systems. Included within this report is general health information, water quality test results, information regarding how to participate in decisions concerning your drinking water, and contact information.

The Tuscarawas County Metropolitan Sewer District (District) is responsible for operating and maintaining four public community water systems located throughout Tuscarawas County as shown in Figure 1. In 2018, drinking water in each of these systems met all Ohio EPA standards.

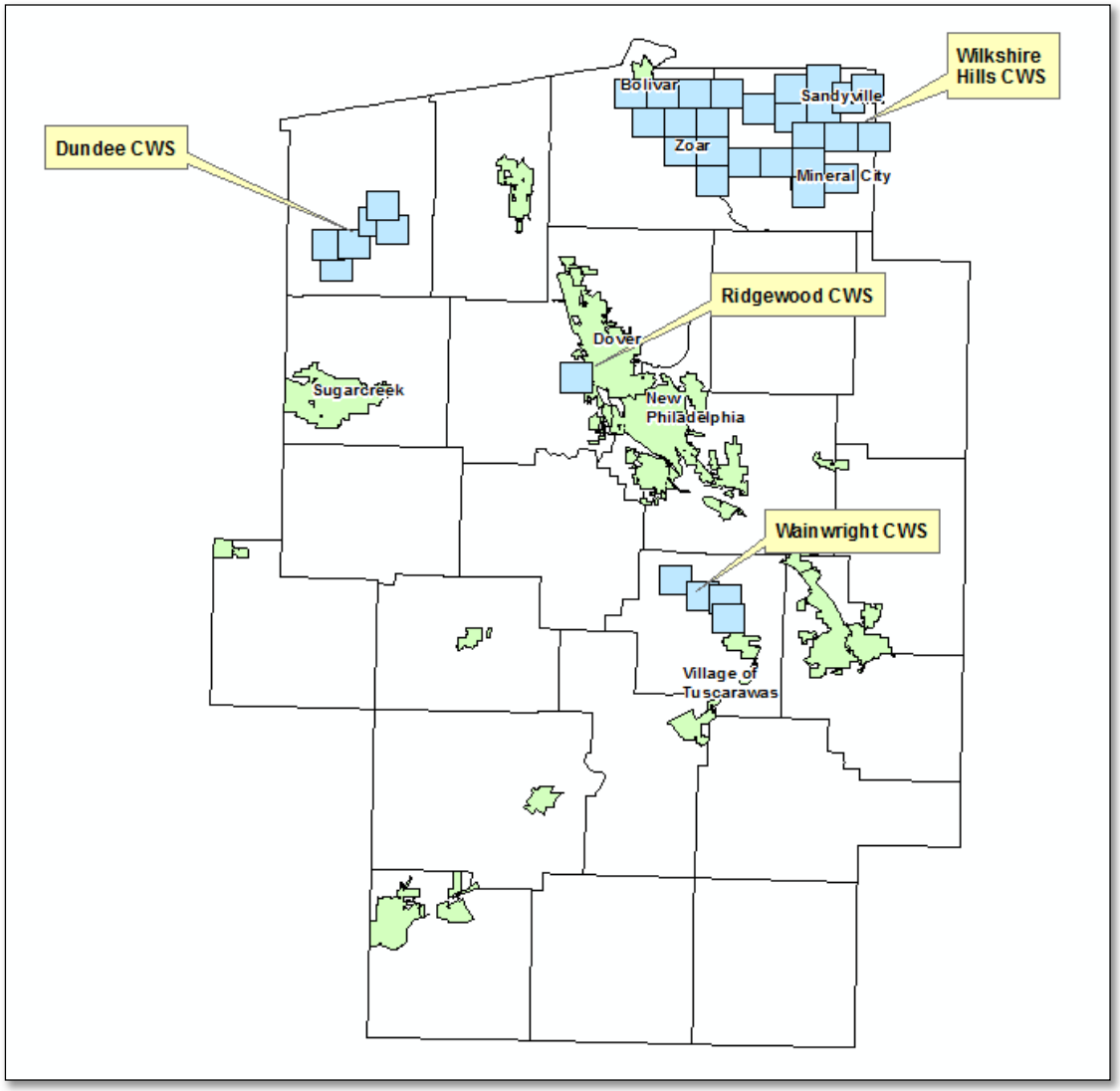

Figure 1 - Map of District Community Water Systems

DUNDEE COMMUNITY WATER SYSTEM ("DUNDEE CWS")

The Dundee CWS provides drinking water to the community of Dundee and surrounding areas of Wayne Township and uses ground water wells as its drinking water source. We have a current, unconditioned license to operate this water system.

This water is treated by filtration and disinfection. Filtration removes particles suspended in the source water. Particles typically include clays and silts, natural organic matter, iron and manganese, and microorganisms. Your water is also treated by disinfection. Disinfection involves the addition of chlorine to kill bacteria and other microorganisms (viruses, cysts, etc.) that may be in the water. Disinfection is considered to be one of the major public health advances of the 20th century.

The state performed an assessment of the Dundee CWS source water in 2003 and later revised the assessment in 2017. It was determined that the aquifer supplying drinking water to the Dundee CWS has a low susceptibility to contamination. This conclusion is based on the presence of a thick, protective layer of bedrock overlaying the aquifer; significant depth of the aquifer (>100 feet); no evidence to suggest that ground water has been impacted by any significant levels of chemical contaminants from human activities; and no apparent significant potential contaminant sources within the protection area.

Refer to **Table 1** at the end of this report for an explanation of the Water Quality Data for the Dundee CWS.

RIDGEWOOD COMMUNITY WATER SYSTEM ("RIDGEWOOD CWS")

The Ridgewood CWS provides drinking water to the Ridgewood Subdivision in Dover Township, and it uses two ground water wells as its drinking water source. We have a current, unconditioned license to operate this water system.

This water is treated by disinfection. Disinfection involves the addition of chlorine to kill dangerous bacteria and microorganisms that may be in the water. Disinfection is considered to be one of the major public health advances of the 20th century.

The state performed an assessment of the Ridgewood CWS source water in 2003. It was determined that the aquifer supplying drinking water to the Ridgewood CWS has a moderate susceptibility to contamination. This determination is based upon the presence of a thick, protective layer of bedrock overlaying the aquifer; significant depth of the aquifer (>100 feet); the presence of low levels of manmade contaminants in three samples of treated water taken between 1994 and 1996 (Ethyl benzene, xylene and dichlorobenzene were detected at levels between 0.9 to 5.8 ppb); and the presence of significant potential contaminant sources within the source water protection area.

Refer to **Table 2** at the end of this report for an explanation of the Water Quality Data for the Ridgewood CWS.

WILKSHIRE HILLS COMMUNITY WATER SYSTEM ("WILKSHIRE CWS")

The Wilkshire CWS provides drinking water to the following water Districts: Wilkshire Hills, Zoar, Mineral City, Lawrence Township Industrial Park, Hunters Green Subdivision, Sandyville, Sandy Valley Estates, and other areas in Lawrence and Sandy Townships. This system receives its source water from two wells located near Welton Road in Lawrence Township. The District has a current, unconditioned license to operate this water system.

This water is treated by disinfection. Disinfection involves the addition of chlorine to kill dangerous bacteria and microorganisms that may be in the water. Disinfection is considered to be one of the major public health advances of the 20th century. In addition to disinfection, we add fluoride to promote dental health. We also add phosphate to control scale formation within the distribution system and to help keep iron and manganese in solution, which reduces aesthetic problems such as staining and discolored water.

The Wilkshire CWS also has two emergency interconnections with the Village of Bolivar; however, neither of these connections were utilized in 2018.

The state performed an assessment of the Wilkshire CWS source water in 2002. It was determined that the aquifer supplying drinking water to the Wilkshire CWS has a high susceptibility to contamination. This determination is based upon the presence of a relatively thin, protective layer of sandy loam and clay overlaying the aquifer; the shallow depth of the aquifer (<30 feet); and the presence of significant potential contaminant sources in the protection area.

Refer to **Table 3** at the end of this report for an explanation of the Water Quality Data for the Wilkshire CWS.

WAINWRIGHT COMMUNITY WATER SYSTEM ("WAINWRIGHT CWS")

This system provides drinking water to the community of Wainwright and surrounding areas of Warwick Township. To supply water for this system, the District is connected to and receives its water from the Village of Tuscarawas. The Village of Tuscarawas receives its drinking water from two wells located near the Village Park along Cherry Street.

This water is treated by disinfection. Disinfection involves the addition of chlorine to kill dangerous bacteria and microorganisms that may be in the water. Disinfection is considered to be one of the major public health advances of the 20th century. The village also uses phosphate to control scale formation within the distribution system and to help keep iron and manganese in solution, which reduces aesthetic problems such as staining.

Prior to entering the Wainwright CWS, the District provides additional chlorination to ensure that the water is safe and all Ohio EPA requirements are satisfied. The District has a current, unconditioned license to operate this water system.

The state performed an assessment of the Wainwright CWS source water (Village of Tuscarawas) in 2002. It was determined that the aquifer supplying drinking water to the Wainwright CWS has a high susceptibility to contamination. This determination is based upon

the lack of a protective layer of clay/shale/other overlaying the aquifer; shallow depth of the aquifer (approx. 10 feet); significant potential contaminant sources within the protection area.

Refer to **Table 4** at the end of this report for an explanation of the Water Quality Data for the Wainwright CWS.

WHAT ARE 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: 1) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife; 2) Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming; 3) Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses; 4) 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 stormwater runoff, and septic systems; and 5) 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 (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).

LEAD IN HOUSEHOLD PLUMBING

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 District is 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 at 800-426-4791 or at http://www.epa.gov/safewater/lead.

WATER QUALITY DATA TABLES

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 Water Quality Data Tables provided at the end of this report list all of the drinking water contaminants that we detected during 2018. Although many more contaminants were tested, only those substances listed in the Water Quality Data Tables 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 conducted in 2018. The EPA 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 the Water Quality Data Tables you will find terms and abbreviations that might not be familiar to you. To help you better understand these terms, we have provided definitions for these terms in the following section.

DEFINITIONS OF SOME TERMS CONTAINED WITHIN THIS REPORT.

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

Annual Running Average (ARA)

Health Advisory Level (HAL)

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.

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.

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.

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.

Secondary Maximum Contaminant Level (SCML): non-mandatory water quality standards established by EPA to serve as guidelines to assist public water systems in managing their drinking water for aesthetic considerations, such as taste, color, and odor. These contaminants are not considered to present risk to human health at the SMCL.

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

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

HOW DO I PARTICIPATE IN DECISIONS CONCERNING MY DRINKING WATER?

Public participation and comments are encouraged at regular meetings of the Tuscarawas County Board of Commissioners which meets weekly on Monday and Wednesday.

For more information on your drinking water contact:

Tuscarawas County Metropolitan Sewer District
9944 Wilkshire Boulevard NE
Bolivar, OH 44612
Phone: (330) 874-3262 Fax: (330) 874-4203
Email: mjones@tcmsd.org
Website: www.tcmsd.org

Director/Sanitary Engineer
Michael Jones, P.E.

Table 1 – Dundee CWS Water Quality Data Table

In 2018, the District sampled for a total of 20 different contaminants in the Dundee CWS. All contaminants were found to be within allowable levels and no health based violations were reported. Below is a list of contaminants that were detected.

Contaminants (units)	MCLG	MCL	Level Found	Range of Detections	Violation	Year Sampled	Typical Source of Contaminants
Inorganic Contaminants							
Barium (ppm)	2	2	0.06	N/A	NO	2016	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chromium (ppb)	100	100	2.06	N/A	NO	2016	Discharge from steel and pulp mills; Erosion of natural deposits
Selenium (ppb)	50	50	2.77	N/A	NO	2016	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines
Disinfection Byproducts							
Total Trihalomethanes, TTHMs (ppb)	0	80	22.9	N/A	NO	2018	Byproduct of drinking water chlorination.
Haloacetic Acids, HAA5s (ppb)	0	60	7.57	N/A	NO	2018	Byproduct of drinking water chlorination.
Residual Disinfectants							
Total Chlorine (ppm)	MRDLG = 4	MRDL = 4	0.83	0.38 – 1.43	NO	2018	Water additive to control microbes
Lead and Copper							
Contaminants (units)	**Action Level (AL)**	**Individual Results over the AL**	**90% of the test levels were less than**		**Violation**	**Year Sampled**	**Typical Source of Contaminants**
Lead (ppb)	15	N/A	3.24		NO	2018	Corrosion of household plumbing systems
	0 out of 5 samples were found to have lead in excess of the lead AL of 15 ppb						
Copper (ppm)	1.3	N/A	0.61		NO	2018	Corrosion of household plumbing systems
	0 out of 5 samples were found to have copper in excess of the copper AL of 1.3 ppm						

In 2018, the District also sampled for total coliform bacteria, Nitrate (as N), and Synethetic Organic Contaminants (Alachlor, Atrazine, and Simazine), which were not detected in the Dundee CWS.

Unregulated Contaminants*			
Contaminants (units)	**Average**	**Range**	**Year Sampled**
Bromodichloromethane (ppb)	1.64	N/A	2018
Dibromochloromethane (ppb)	4.88	N/A	2018

** 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.*

Table 2 – Ridgewod CWS Water Quality Data Table

In 2018, the District sampled for a total of 18 different contaminants in the Ridgewood CWS. All contaminants were found to be within allowable levels and no health based violations were reported. Below is a list of contaminants that were detected.

Contaminants (units)	MCLG	MCL	Level Found	Range of Detections	Violation	Year Sampled	Typical Source of Contaminants
Inorganic Contaminants							
Barium (ppm)	2	2	0.08	N/A	NO	2016	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Selenium (ppb)	50	50	2.02	N/A	NO	2016	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines
Disinfection Byproducts							
Total Trihalomethanes, TTHMs (ppb)	0	80	15.0	N/A	NO	2018	Byproduct of drinking water chlorination.
Haloacetic Acids, HAA5s (ppb)	0	60	2.85	N/A	NO	2018	Byproduct of drinking water chlorination.
Residual Disinfectants							
Total Chlorine (ppm)	MRDLG = 4	MRDL = 4	1.02	0.77 – 1.27	NO	2018	Water additive to control microbes
Lead and Copper							
Contaminants (units)	**Action Level (AL)**	**Individual Results over the AL**	**90% of the test levels were less than**	**Violation**	**Year Sampled**	**Typical Source of Contaminants**	
Lead (ppb)	15	N/A	2.65	NO	2017	Corrosion of household plumbing systems	
	0 out of 5 samples were found to have lead in excess of the lead AL of 15 ppb						
Copper (ppm)	1.3	N/A	0.22	NO	2017	Corrosion of household plumbing systems	
	0 out of 5 samples were found to have copper in excess of the copper AL of 1.3 ppm						

In 2018, the District also sampled for total coliform bacteria, Nitrate (as N), and Synethetic Organic Contaminants (Alachlor, Atrazine, and Simazine), which were not detected in the Ridgewood CWS.

Unregulated Contaminants*			
Contaminants (units)	**Average**	**Range**	**Year Sampled**
Bromodichloromethane (ppb)	0.50	N/A	2018
Dibromochloromethane (ppb)	2.04	N/A	2018

* *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.*

Table 3 – Wilkshire CWS Water Quality Data Table

In 2018, the District sampled for a total of 21 different contaminants in the Wilkshire CWS. All contaminants were found to be within allowable levels and no health based violations were reported. Below is a list of contaminants that were detected.

Contaminants (units)	MCLG	MCL	Level Found	Range of Detections	Violation	Year Sampled	Typical Source of Contaminants
Inorganic Contaminants							
Barium (ppm)	2	2	0.07	N/A	NO	2016	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Fluoride (ppm)	4	4	1.20	0.80 – 1.44	NO	2018	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Nitrate (as N) (ppm)	10	10	2.22	N/A	NO	2018	Runoff from fertilizer use; Leaching from septic tanks; Sewage; Erosion of natural deposits
Selenium (ppb)	50	50	2.55	N/A	NO	2016	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines
Disinfection Byproducts							
Total Trihalomethanes, TTHMs (ppb)	0	80	8.48	7.95 – 9.01	NO	2018	Byproduct of drinking water chlorination.
Residual Disinfectants							
Total Chlorine (ppm)	MRDLG = 4	MRDL = 4	1.02	0.67 – 1.21	NO	2018	Water additive to control microbes
Lead and Copper							
Contaminants (units)	**Action Level (AL)**	**Individual Results over the AL**		**90% of the test levels were less than**	**Violation**	**Year Sampled**	**Typical Source of Contaminants**
Lead (ppb)	15	N/A		1.77	NO	2018	Corrosion of household plumbing systems
	0 out of 20 samples were found to have lead in excess of the lead AL of 15 ppb						
Copper (ppm)	1.3	2.05		0.66	NO	2018	Corrosion of household plumbing systems
	1 out of 20 samples were found to have copper in excess of the copper AL of 1.3 ppm						

In 2018, the District also sampled for total coliform bacteria, haloacetic acids (HAA5s), and Synethetic Organic Contaminants (Alachlor, Atrazine, and Simazine), which were not detected in the Wilkshire CWS.

Unregulated Contaminants*			
Contaminants (units)	**Average**	**Range**	**Year Sampled**
Bromodichloromethane (ppb)	2.62	2.57 – 2.66	2018
Dibromochloromethane (ppb)	2.48	2.22 – 2.73	2018

** 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.*

Secondary Contaminants**				
Contaminants (units)	**SMCL**	**HAL**	**Range**	**Year Sampled**
Iron (ppb)	300	N/A	<10 – 480	2018
Manganese (ppb)	50	345	<10 –195	2018

*** Secondary contaminants may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor or color) in drinking water. During December 2018, the District exceeded the SCML for both iron and manganese; however, the levels are below the health advisory level established by EPA. In order to address this issue, the District is seeking funding for the construction of new pressure filtration facilities in order to remove iron and manganese from the source water.*

In 2018, the District completed a preliminary engineering study for expansion of the existing treatment facilities to include pressure filtration for the removal of iron and manganese. The estimated cost of this project is roughly $3.5 million. The improvements will include expansion of the existing well field, which is critical to ensure the long-term supply of water to our customers.

The District is currently seeking funding through USDA Rural Development, as well as the Ohio EPA's Water Supply Revolving Loan Fund. Depending upon the available funding for this project, we anticipate the project may be complete within the next 3 years.

Table 4 – Wainwright CWS Water Quality Data Table

In 2018, the District sampled for a total of 18 different contaminants in the Wainwright CWS. All contaminants were found to be within allowable levels and no health based violations were reported. Below is a list of contaminants that were detected.

Contaminants (units)	MCLG	MCL	Level Found	Range of Detections	Violation	Year Sampled	Typical Source of Contaminants
Inorganic Contaminants							
Nitrate (as N) (ppm)	10	10	0.62	N/A	NO	2018	Runoff from fertilizer use; Leaching from septic tanks; Sewage; Erosion of natural deposits
Disinfection Byproducts							
Total Trihalomethanes, TTHMs (ppb)	0	80	19.2	N/A	NO	2018	Byproduct of drinking water chlorination.
Haloacetic Acids, HAA5s (ppb)	0	60	2.05	N/A	NO	2018	Byproduct of drinking water chlorination
Residual Disinfectants							
Total Chlorine (ppm)	MRDLG = 4	MRDL = 4	0.73	0.48 – 0.92	NO	2018	Water additive to control microbes
Radioactive Contaminants							
Gross Alpha, inc. Radon (pCi/L)	0	5	4.25	N/A	NO	2016	Erosion of natural deposits
Lead and Copper							
Contaminants (units)	**Action Level (AL)**	**Individual Results over the AL**	**90% of the test levels were less than**	**Violation**	**Year Sampled**	**Typical Source of Contaminants**	
Lead (ppb)	15	N/A	0.83	NO	2016	Corrosion of household plumbing systems	
	0 out of 5 samples were found to have lead in excess of the lead AL of 15 ppb						
Copper (ppm)	1.3	N/A	0.42	NO	2016	Corrosion of household plumbing systems	
	0 out of 5 samples were found to have copper in excess of the copper AL of 1.3 ppm						

In 2018, the Village of Tuscarawas also sampled for Arsenic, which was not detected in the Village of Tuscarawas water supply. In 2018, the District also sampled for total coliform bacteria, which was not detected in the Wainwright CWS.

Unregulated Contaminants*			
Contaminants (units)	**Average**	**Range**	**Year Sampled**
Bromodichloromethane (ppb)	6.35	N/A	2018
Dibromochloromethane (ppb)	6.70	N/A	2018

** 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.*