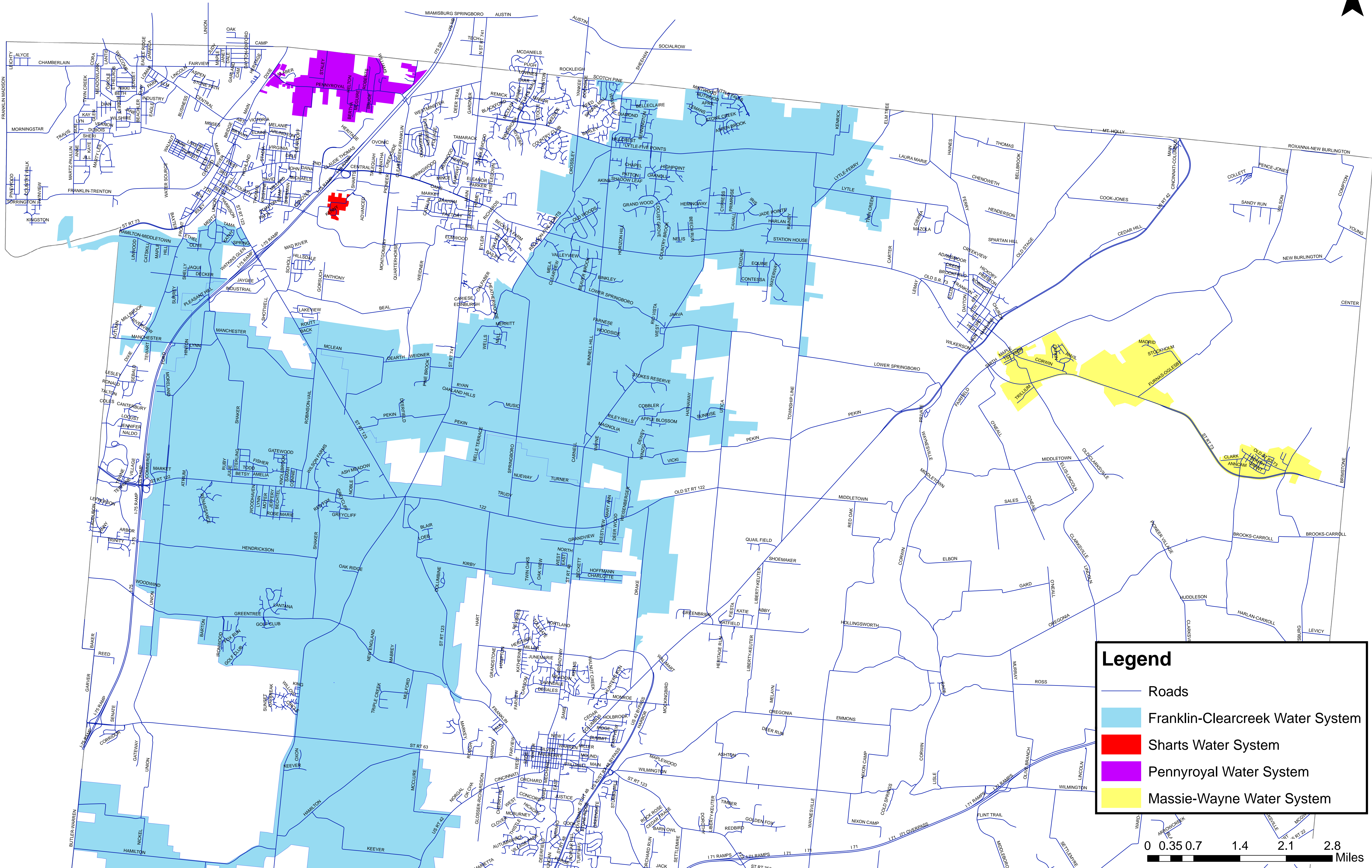
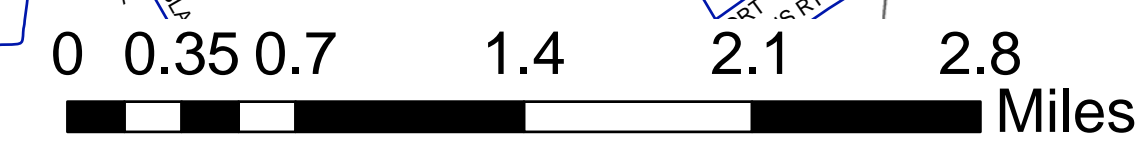


SERVICE AREA BOUNDARY MAP - NORTHERN WARREN COUNTY

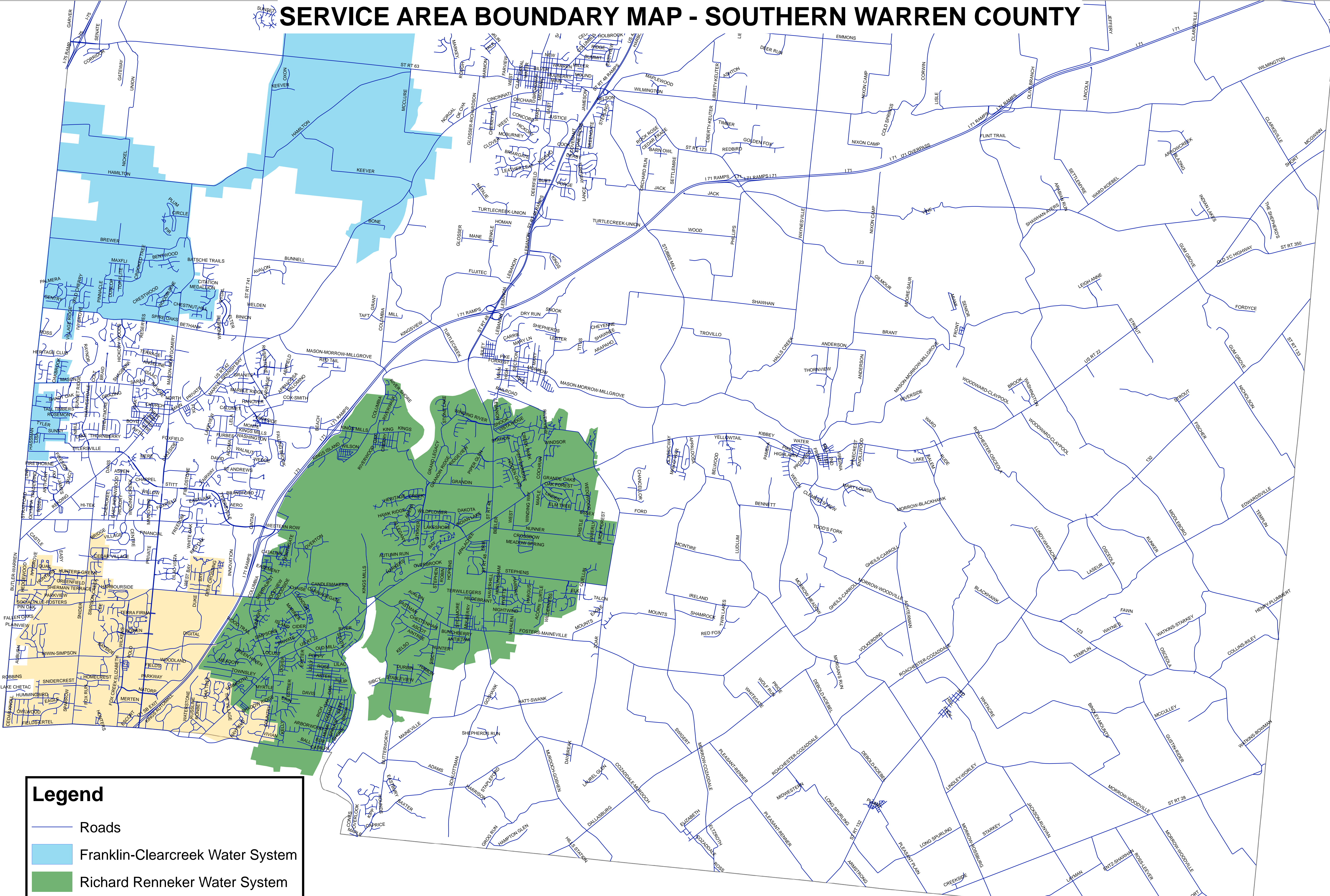


Legend

- Roads
- Franklin-Clearcreek Water System
- Sharts Water System
- Pennyroyal Water System
- Massie-Wayne Water System

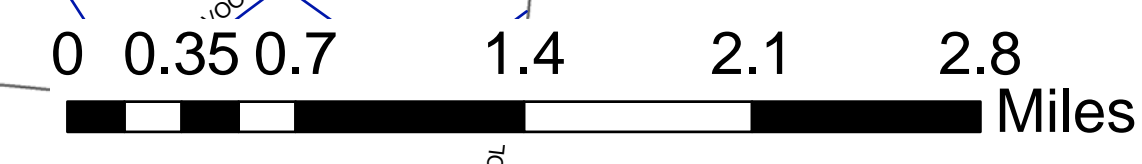


SERVICE AREA BOUNDARY MAP - SOUTHERN WARREN COUNTY



Legend

- Roads
- Franklin-Clearcreek Water System
- Richard Renneker Water System
- Socialville Water System



Warren County Water and Sewer Department

CONSUMER CONFIDENCE REPORT (CCR)

2018 Water Quality Report for the Franklin Area Water System

PWSID# 8301603

The Warren County Water Department has prepared the following information for the Franklin Area Water System. Included in this report is general health information, water quality test results, how to participate in decision concerning your drinking water and water system contacts. This annual water quality report describes the water source, lists test results, and contains important information about drinking water from the previous year. Reporting is a requirement of the Safe Drinking Water Act of 1996. We encourage public participation in our community's future. The Warren County Board of Commissioners meeting is held on Tuesday at 9:00 A.M. and every other Thursday at 5:00 P.M. The public is welcome.

Water Source

The well field is located in northwest Warren County. It is bordered by Trenton-Franklin Road on the north, Twin Creek on the west, the Great Miami River on the south, and the Conrail tracks on the east. This is an area of the confluence of the Twin Creek and Great Miami Buried Valley Aquifers. The water quality is exceptional and does not require treatment other than the addition of fluoride and chlorine. The Aquifer that supplies the Franklin-Clearcreek wellfield has been determined to have a high susceptibility to contamination due to the presence of significant potential contaminate sources in the protection area. However, there is no evidence to suggest that ground water has been impacted by significant levels of chemical contaminants from human activities. The source water assessment can be found at <http://wwwapp.epa.ohio.gov/gis/swpa/OH8301603.pdf>.

The Franklin-Clearcreek Water System also has several interconnections for emergency backup purposes. These connections are as follows:

- 4151 Lytle Road (Waynesville, Ohio) with Waynesville Water.
- 3050 State Route 73 (Waynesville, Ohio) with Waynesville Water.
- 8656 Bunnell Hill Road (Springboro, Ohio) with Springboro/Veolia Water.
- 15 Lytle Five Points Road (Springboro, Ohio) with Springboro/Veolia Water.
- 346 Lytle Road Springboro Tower (Springboro, Ohio) with Springboro/Veolia Water.
- 3763 Beal Road (Franklin, Ohio) with Franklin Water.
- 6010 State Route 123 (Franklin, Ohio) with Franklin Water.
- 7068 Dixie Hwy (Franklin, Ohio) with Franklin Water.
- 6562 Manchester Road (Middletown, Ohio) with Middletown Water.
- 2467 State Route 48 (Lebanon, Ohio) with Lebanon Water.
- Hamilton-Mason Road & Butler-Warren Road (Mason, Ohio) with Butler County and Greater Cincinnati Water Works.
- 17562 State Route 48 (South Lebanon, Ohio) with Warren County Water.

Sources of Drinking Water Contamination

The sources of drinking water (both tap water and bottled water) included rivers, lakes, streams, pond, 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 results 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 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 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)**.

About Your Drinking Water

The EPA requires sampling to ensure drinking water safety. The Franklin-Clearcreek Water System conducted sampling for (Bacteria, Nitrate, Synthetic Organic Chemicals (SOC Group 1 and 3) plus Disinfection By-Products) during 2018. 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, are more than one year old.

License

The Franklin Area Water System currently has an unconditioned license to operate.

Contact

For further information about water quality, contact the Warren County Water and Sewer Department (WCWSD).

Hours of operation are 7:30 AM and 4:00 PM, Monday through Friday:

Main Office (513) 695-1377
Superintendent of Operations (513) 683-3687 **FAX (513) 697-1752**
Laboratory Supervisor (513) 583-3091 **FAX (513) 583-3093**
WEB SITE: <http://www.co.warren.oh.us/>

Send correspondence to: **Warren County Water and Sewer, PO Box 530, Lebanon, OH 45036-0530**

Water Quality Tables

An Explanation of the Water Quality Data Tables

This report is based upon tests conducted by the Warren County Water Laboratory and its contract laboratory. Terms used in the Water Quality Tables and in other parts of this report are defined here.

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.

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

ppm: parts per million

ppb: parts per billion

mg/L: milligram per liter

f/l: fibers per liter

n/r: not regulated

Compliance Monitoring and Disinfection Requirements 2018

Substance	Highest Level Detected	Range of Detection	MCL	Ideal Goals (MCLG)	Violation	Sources of Substances
Fluoride (mg/L)	1.13	0.8 - 1.3	4	4	No	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories.
Chlorine (mg/L)	1.7	0.2 - 2.0	4.0	4.0	No	Element used for disinfection
**Total Coliform Monitoring	1	n/a	None	None	No	Safely removed using chlorine. 360 samples taken with no positive coliforms. 1 sample Total Coliform Positive, E. Coli Negative
Water Hardness	18 grains	NA	NA	NA	No	Dissolved mineral salts, most calcium and magnesium carbonate and bicarbonates

** June 21, 2018, the Franklin Area Water System had a routine bacteria sample reported as Total Coliform Positive. As required by the Ground Water Rule, the laboratory staff collected three system samples within the vicinity of the original sample and one source water sample. All repeat system samples and the one source water sample, reported as Total Coliform Negative/E.coli negative.

All water systems are required to begin compliance with the new rule (Revised Total Coliform Rule, April 1, 2016). The new rule maintains the purpose to protect public health by ensuring the integrity of the drinking water distribution system and monitoring for the presence of total coliform bacteria, which includes E. coli bacteria. The U.S. EPA anticipates greater public health protection under the new rule, as it requires water systems that are vulnerable to microbial contamination to identify and fix problems. As a result, under the new rule there is no longer a maximum contaminant level violation for multiple total coliform detections. Instead, the new rule requires water systems that exceed a specified frequency of total coliform occurrences to conduct an assessment to determine if any significant deficiencies exist. If found, these must be corrected by the Public Water System.

Action Levels (AL) control Copper and Lead. Samples are collected and ranked by how much lead or copper they contain. If the 90th percentile exceeds the Action Level, specific corrective actions are required. **Thirty samples were taken in 2017.**

Substance	Detected	Range	MCL	MCLG	Violation	Sources	Samples Greater Than Action Level
Copper	.258 mg/L 90 th percentile	.017 to .627 mg/L	AL = 1.3 mg/L	1.3 mg/L	No	Piping used in distribution system and house hold plumbing	0
Lead	8.018ppb 90 th percentile	<2.0 to 26.00 ppb	AL = 15 ppb	0 ppb	No	Piping used in distribution system and house hold plumbing	1

“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 Franklin Area Water System 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. For more information on lead in drinking water, testing methods, and steps you can take to minimize exposure: Safe Drinking Water Hotline at <http://www.epa.gov/safewater/lead>, and Ohio EPA: Learn About Lead: <http://epa.ohio.gov/pic/lead.aspx>.”

The table below lists drinking water contaminants that were tested for in the Franklin Area Water System.

Substance	Highest Level Detected	Range of Detection	MCL	Ideal Goals (MCLG)	Violation	Sources of Substances
Nitrate Nitrite (ppm)	0.947	n.d.-.947	10	10	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Total Trihalomethanes (ppb)	26.01	16.1-26.01	80	0	No	By-products of drinking water chlorination. Form when naturally occurring organic matter reacts with chlorine and other disinfectants.
Bromodichloromethane (ppb)	7.7	7.7-4.81	80	0	No	By-products of drinking water chlorination. Form when naturally occurring organic matter reacts with chlorine and other disinfectants
Bromoform (ppb)	1.61	.95-1.61	80	0	No	By-products of drinking water chlorination. Form when naturally occurring organic matter reacts with chlorine and other disinfectants
Chloroform (ppb)	12.25	5.18-12.25	80	0	No	By-products of drinking water chlorination. Form when naturally occurring organic matter reacts with chlorine and other disinfectants
Dibromochloromethane (ppb)	5.11	4.5-5.11	80	0	No	By-products of drinking water chlorination. Form when naturally occurring organic matter reacts with chlorine and other disinfectants
HAA5 Haloacetic acids (ppb)	8.267	3.144- 8.267	60	0	No	By-products of drinking water Chlorination. Are formed when chlorine reacts with naturally occurring organic matter
Bromochloroacetic acid (ppb)	2.609	1.929-2.609	60	0	No	By-products of drinking water Chlorination. Are formed when chlorine reacts with naturally occurring organic matter
Dibromoacetic acid (ppb)	1.506	1.438-1.506	60	0	No	By-products of drinking water Chlorination. Are formed when chlorine reacts with naturally occurring organic matter
Dichloroacetic acid (ppb)	4.088	1.638-4.088	60	0	No	By-products of drinking water Chlorination. Are formed when chlorine reacts with naturally occurring organic matter
Monobromoacetic acid (ppb)	<1.0	<1.0	60	0	No	By-products of drinking water Chlorination. Are formed when chlorine reacts with naturally occurring organic matter
Monochloroacetic acid (ppb)	<2.0	<2.0	60	0	No	By-products of drinking water Chlorination. Are formed when chlorine reacts with naturally occurring organic matter
Trichloroacetic acid (ppb)	2.75	<1.0-2.75	60	0	No	By-products of drinking water Chlorination. Are formed when chlorine reacts with naturally occurring organic matter

SOC Group 3 collected in 2018

Substance	Highest Level Detected	Range of Detection	MCL	Ideal Goals (MCLG)	Violation	Sources of Substances
DIQUAT	<2 ppb	<2 ppb	20 ppb	0	No	Runoff from herbicide use
g-HCH (Lindane)	<0.1 ppb	<0.1ppb	.2 ppb	0	No	Runoff/leaching from insecticide used on cattle, lumber, gardens
PCB-1016 (AROCHLOR)	<.1ppb	<0.1 ppb	.2 ppb	0	No	Hydraulic Fluid, plasticizers, adhesives, fire retardants, way extenders, de-dusting agents, Pesticide extenders, inks, lubricants, heat transfer systems, carbonless reproducing paper
PCB-1221 (AROCHLOR)	<.1ppb	<0.1 ppb	.2 ppb	0	No	Hydraulic Fluid, plasticizers, adhesives, fire retardants, way extenders, de-dusting agents, Pesticide extenders, inks, lubricants, heat transfer systems, carbonless reproducing paper
PCB-1232 (AROCHLOR)	<.1ppb	<0.1 ppb	.2 ppb	0	No	Hydraulic Fluid, plasticizers, adhesives, fire retardants, way extenders, de-dusting agents, Pesticide extenders, inks, lubricants, heat transfer systems, carbonless reproducing paper
PCB-1242 (AROCHLOR)	<.1ppb	<0.1 ppb	.2 ppb	0	No	Hydraulic Fluid, plasticizers, adhesives, fire retardants, way extenders, de-dusting agents, Pesticide extenders, inks, lubricants, heat transfer systems, carbonless reproducing paper
PCB-1248 (AROCHLOR)	<.1ppb	<0.1 ppb	.2 ppb	0	No	Hydraulic Fluid, plasticizers, adhesives, fire retardants, way extenders, de-dusting agents, Pesticide extenders, inks, lubricants, heat transfer systems, carbonless reproducing paper
PCB-1254 (AROCHLOR)	<.1ppb	<0.1 ppb	.2 ppb	0	No	Hydraulic Fluid, plasticizers, adhesives, fire retardants, way extenders, de-dusting agents, Pesticide extenders, inks, lubricants, heat transfer systems, carbonless reproducing paper
PCB-1260 (AROCHLOR)	<.1ppb	<0.1 ppb	.2 ppb	0	No	Hydraulic Fluid, plasticizers, adhesives, fire retardants, way extenders, de-dusting agents, Pesticide extenders, inks, lubricants, heat transfer systems, carbonless reproducing paper
TOTAL PCB's	<.1ppb	<0.1 ppb	.5 ppb	0	No	Hydraulic Fluid, plasticizers, adhesives, fire retardants, way extenders, de-dusting agents, Pesticide extenders, inks, lubricants, heat transfer systems, carbonless reproducing paper
p,p'-METHOXYCHLOR	<.1ppb	<0.1 ppb	400 ppb	0	No	Runoff/leaching from insecticides
GLYPHOSATE	<30 ppb	<30 ppb	700 ppb	700	No	Runoff from Herbicide use

SOC Group 1 collected in 2018

Substance	Highest Level Detected	Range of Detection	MCL	Ideal Goals (MCLG)	Violation	Sources of Substance
ALACHLOR (LASSO)	<0.2 ppb	<0.2ppb	2 ppb	0	No	Runoff from Herbicide
Simazine	<0.35 ppb	<0.35 ppb	4 ppb	4 ppb	No	Runoff from Herbicide
Atrazine	<0.3 ppb	<0.3 ppb	3 ppb	3 ppb	No	Runoff from Herbicide

Warren County Water and Sewer Department

CONSUMER CONFIDENCE REPORT (CCR)

2018 Water Quality Report for the Massie-Wayne Water System

PWSID# 8345912

The Warren County Water Department has prepared the following information for the Massie-Wayne Water System. Included in this report is general health information, water quality test results, how to participate in decision concerning your drinking water and water system contacts. This annual water quality report describes the water source, lists test results, and contains important information about drinking water from the previous year. Reporting is a requirement of the Safe Drinking Water Act of 1996. We encourage public participation in our community's future. The Warren County Board of Commissioners meeting is held on Tuesday at 10:00 A.M. and every other Thursday at 5:00 P.M. The public is welcome.

Water Source

Warren County purchases its water for the Massie-Wayne Water System from the Village of Waynesville. The water source is known as the Little Miami Buried Valley Aquifer. Water is supplied from four wells located in the Waynesville Water wellfield at 7198 North US Route 42. This location is approximately one-half mile north on State Route 42 from the intersection of State Route 73 and US Route 42. The aquifer that supplies the wellfield has been determined to have high susceptibility to contamination due to the presence of significant potential contaminant sources in the protection area. However, there is no evidence to suggest that ground water has been impacted by significant levels of chemical contaminants from human activities. The source water assessment for the Village of Waynesville can be found at <http://wwwapp.epa.ohio.gov/gis/swpa/OH8302012.pdf>.

The Massie-Wayne Water system has an emergency interconnection with Western Water Company located at Brimstone Road and State Route 73 (Harveysburg, Ohio). During the year, the Massie-Wayne Water System draws water from the Western Water Company. The usage is roughly 1 million gallons over 365 days. The Western Water Company quality report can be found on the website at www.western-h2o.com or by calling (513)722-1682.

Sources of Drinking Water Contamination

The sources of drinking water (both tap water and bottled water) included rivers, lakes, streams, pond, 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 results 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 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 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)**

About Your Drinking Water

The EPA requires sampling to ensure drinking water safety. The Massie –Wayne Water System conducted sampling for (Bacteria, Lead, Copper, and Disinfection by-Products) during 2018. 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, are more than one year old.

License

The Massie Wayne Water System currently operates with an unconditioned license to operate.

Whom to Contact

For further information about water quality, contact the Warren County Water and Sewer Department (WCWSD).

Hours of operation are 8:00 AM - 5:00 PM, Monday through Friday:

Main Office	(513) 695-1377	
Superintendent of Operations	(513) 683-3687	FAX (513) 697-1752
Laboratory Supervisor	(513) 583-3091	FAX (513) 583-3093
WEB SITE: http://www.co.warren.oh.us/		

Send correspondence to: **Warren County Water and Sewer, PO Box 530, Lebanon, OH 45036-0530**

Water Quality Tables

Explanation of the Water Quality Data Tables

This report is based upon tests conducted by the Village of Waynesville and Warren County's Water Laboratory. Terms used in the Water Quality Tables and in other parts of this report are defined here.

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.

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

ppm: parts per million

ppb: parts per billion

mg/L: milligrams per liter

f/l: fibers per liter

n. r.: not regulated

Compliance Monitoring for 2018

Substance	Violation	Highest Level Detected	Range	MCL	Ideal Goals (MCLG)	Sources of Substances
**Chlorine (mg/L)	No	2.0	0.2 - 2.0	4.0	4.0	Element used for disinfection
*Nitrogen, Nitrate+Nitrite (ppm)	No	2.06	n/a	10.0	10.0	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
*Barium (ppm) 2016	No	.0744	n/a	4	4	Discharge of Drilling wastes; Discharge from metal refineries; Erosion of natural deposits
*Alpha Emitters pCi/L 2013	No	6.38	n/a	15	0	Erosion of natural deposits
*Combined Radium pCi/L 2013	No	1.60	n/a	5	0	Erosion of natural deposits

**Collected by the Village of Waynesville*

** Samples collected by the Warren County Water Department

Compliance Monitoring for Bacteria and Water Hardness 2018

Substance	Violation	Level Detected	MCL	Ideal Goals(MCLG)	Sources of Substances
Total Coliform Monitoring	No	None	1	0	Safely removed using chlorine. 24 samples collected and none positive for Total Coliform
Water Hardness	No	20 grains	NA	NA	natural minerals like calcium

The table below lists all the drinking water contaminants that were detected between January 1 and December 31, 2018 (unless otherwise noted). The presence of the contaminants in the water does not necessarily indicate that the water poses a health risk.

Substance (unit)	MCL	MCLG	Highest level Detected	Range of Detection	Violation	Sources of Substance
**Total Trihalomethane (ppb)	80	0	19.47	17.58-19.47	no	By-product of drinking water Chlorination
Bromodichloromethane (ppb)	80	0	6.16	5.80-6.16	no	By-product of drinking water Chlorination
Bromoform (ppb)	80	0	1.39	1.30-1.39	no	By-product of drinking water Chlorination
Chloroform (ppb)	80	0	7.48	6.23-7.48	no	By-product of drinking water Chlorination
Dibromochloromethane (ppb)	80	0	4.44	4.25-4.44	no	By-products of drinking water Chlorination.
**HAA5 (Haloacetic Acid) (ppb)	60	0	4.299	4.149-4.299	no	By-products of drinking water Chlorination.
Bromochloroacetic acid (ppb)	60	0	2.271	2.154-2.271	no	By-products of drinking water Chlorination.
Dibromoacetic acid (ppb)	60	0	1.624	1.479-1.624	no	By-products of drinking water Chlorination.
Dichloroacetic acid (ppb)	60	0	2.675	2.670-2.675	no	By-products of drinking water Chlorination.
Monobromoacetic acid (ppb)	60	0	<1.0	<1.0	no	By-products of drinking water Chlorination.
Monochloroacetic acid (ppb)	60	0	<2.0	<2.0	no	By-products of drinking water Chlorination.
Trichloroacetic acid (ppb)	60	0	<1.0	<1.0	no	By-products of drinking water Chlorination.

Action Levels (AL) control copper and lead. Samples are collected and ranked by how much lead or copper they contain. The 90th percentile of each ranking is determined. If the 90th percentile exceeds the Action Level, specific corrective actions are required. None of our 90th percentiles exceeded the Action Levels. **Samples collected in 2018**

Substance	Detected	Range	MCL	MCLG	Violation	Sources	Number of Samples Greater Than Action Level
Copper	0.227 mg/L 90th Percentile	.046 -.555 mg/L	1.3 mg/L	1.3 mg/L	No	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives.	0
Lead	4.2 ppb 90th Percentile	< 0.5- 9 ppb	15 ppb	0	No	Corrosion of household plumbing; natural deposits.	0

"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 Massie-Wayne Water System 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. For more information on lead in drinking water, testing methods, and steps you can take to minimize exposure: Safe Drinking Water Hotline at <http://www.epa.gov/safewater/lead>, and Ohio EPA: Learn About Lead: <http://epa.ohio.gov/pic/lead.aspx>."

Warren County Water and Sewer Department

CONSUMER CONFIDENCE REPORT (CCR)

2018 Water Quality Report for Pennyroyal Water System

PWSID# 8301803

The Warren County Water Department has prepared the following information for the Pennyroyal Water System. Included in this report is general health information, water quality test results, how to participate in decision concerning your drinking water and water system contacts. This annual water quality report describes the water source, lists test results, and contains important information about drinking water from the previous year. Reporting is a requirement of the Safe Drinking Water Act of 1996. We encourage public participation in our community's future. The Warren County Board of Commissioners meeting is held on Tuesday at 10:00 A.M. and every other Thursday at 5:00 P.M. The public is welcome.

Water Source

Warren County purchases the water for the Pennyroyal Water System from the City of Springboro (Veolia Water). The City of Springboro obtains its drinking water supply from the buried sand and gravel aquifers associated with the Great Miami River. The City of Springboro has five (5) wells to draw water from the aquifer. The wells are located on the west side of the Great Miami River near 8858 Dayton-Oxford Road. The Water Treatment Plant and well field is south of Chautauqua and borders the Village of Carlisle. Well water is pumped directly to the water treatment plant, where the water is filtered and treated with chlorine and fluoride. The drinking water source assessment report can be found at <http://wwwapp.epa.ohio.gov/gis/swpa/OH8301412.pdf>.

The Pennyroyal Water system is also equipped with an interconnection for emergency purposes. This connection is between Warren County and Montgomery County on Staley Road. The Montgomery County Water report can be found at www.mcoho.org or call (937)781-2500.

Sources of Drinking Water Contamination

The sources of drinking water (both tap water and bottled water) included rivers, lakes, streams, pond, 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 results 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 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 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)**.

About Your Drinking Water

The EPA requires sampling to ensure drinking water safety. The Pennyroyal Water System conducted sampling for (Bacteria and Disinfection By-Products) during 2018. 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, are more than one year old.

License

The Pennyroyal Water System currently has an unconditioned license to operate.

Whom to Contact

For further information about water quality, contact the Warren County Water and Sewer Department (WCWSD).

Hours of operation are 7:30 AM and 4:00 PM, Monday through Friday:

Main Office (513)695-1377
Superintendent of Operations (513)683-3687 FAX (513)697-1752
Laboratory Supervisor (513) 583-3091 FAX (513) 583-3093
WEB SITE: <http://www.co.warren.oh.us/>

Send correspondence to: **Warren County Water and Sewer, PO Box 530, Lebanon, OH 45036-0530**

Water Quality Tables

An Explanation of the Water Quality Data Tables

This report is based upon tests conducted by the City of Springboro and Warren County's Water Laboratory. Terms used in the Water Quality Tables and in other parts of this report are defined here.

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.

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

ppm: parts per million

ppb: parts per billion

ug/L: micrograms per liter

mg/L: milligrams per liter

f/l: fiber per liter

pCi/L: parts per trillion per liter

n. r.: not regulated

"<": Symbol that means less than

**** Collected by the Springboro Water Department. (Veolia Water)**

***Collected by the Warren County Water Department**

Compliance Monitoring 2018

Substance	Violation	Level Detected	Range of Detection	MCL	MCLG	Source of Substance
**Fluoride mg/L	No	1.09	0.54 - 1.09	4	4	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories.
**Nitrate mg/L	No	0.668	0.668	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
*Total Coliform Monitoring	No	None	None	0	0	Safely removed using chlorine. No coliform bacteria detected in 24 samples collected in 2018
*Chlorine Residual mg/L	No	1.8	0.2 - 2.0	4.0	4.0	Element used for disinfection

The table below lists all the drinking water contaminants that were detected between January 1 and December 31, 2018. The presence of the contaminants in the water does not necessarily indicate that the water poses a health risk.

Pennyroyal- Required Monitoring information - 2018

Substance	Violation	Highest Level Detected	Range of Detection	MCL	Ideal Goals (MCLG)	Sources of Substances
*Total Trihalomethane (ppb)	No	18.0	12.37-18.00	80	0	By-products of drinking water chlorination.
Bromodichloromethane (ppb)	No	5.12	3.45-5.12	80	0	By-products of drinking water chlorination.
Bromoform (ppb)	No	2.34	1.7-2.34	80	0	By-products of drinking water chlorination.
Chloroform (ppb)	No	5.19	3.62-5.19	80	0	By-products of drinking water chlorination.
Dibromochloromethane (ppb)	No	5.35	3.9-5.35	80	0	By-products of drinking water chlorination.
*HAA5 (Total Haloacetic Acids) (ppb)	No	1.798	1.283-1.798	60	0	By-products of drinking water Chlorination.
Bromochloroacetic Acid (ppb)	No	1.804	1.018-1.804	60	0	By-products of drinking water Chlorination.
Dibchloroacetic Acid (ppb)	No	1.798	1.283-1.798	60	0	By-products of drinking water Chlorination.
Dibromoacetic Acid (ppb)	No	<1.0	<1.0	60	0	By-products of drinking water Chlorination.
Monobromoacetic Acid (ppb)	No	<1.0	<1.0	60	0	By-products of drinking water Chlorination.
Monochloroacetic Acid (ppb)	No	<2.0	<2.0	60	0	By-products of drinking water Chlorination.
Trichloroacetic Acid (ppb)	No	<1.0	<1.0	60	0	By-products of drinking water Chlorination.

Action Levels (AL) control Copper and Lead. Samples are collected and ranked by how much lead or copper they contain. The 90th percentile of each ranking is determined. If the 90th percentile exceeds the Action Level, specific corrective actions are required. None of our 90th percentiles exceeded the Action Levels. **The Warren County Water Laboratory collected ten samples in 2018.**

Substance	Detected	Range of Detection	MCL	MCLG	Sources	Number of Samples Greater Than Action Level
Copper	0.176 mg/L 90 th percentile	0.0287 to 0.194 mg/L	AL = 1.3 mg/L	1.3mg/L	Piping used in distribution system and house hold plumbing	0
Lead	5.59 ppb 90 th percentile	<2.0-12.2 ppb	AL = 15 ppb	0.0 ppb	Piping used in distribution system and house hold plumbing	0

“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 Pennyroyal Water System 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. For more information on lead in drinking water, testing methods, and steps you can take to minimize exposure: Safe Drinking Water Hotline at <http://www.epa.gov/safewater/lead>, and Ohio EPA: Learn About Lead: <http://epa.ohio.gov/pic/lead.aspx>.”

Warren County Water and Sewer Department

CONSUMER CONFIDENCE REPORT (CCR)

2018 Water Quality Report for the Richard Renneker Water System

PWSID# 8301512

The Warren County Water Department has prepared the following information for the Richard Renneker Water System. Included in this report is general health information, water quality test results, how to participate in decision concerning your drinking water and water system contacts. This annual water quality report describes the water source, lists test results, and contains important information about drinking water from the previous year. Reporting is a requirement of the Safe Drinking Water Act of 1996. We encourage public participation in our community's future. The Warren County Board of Commissioners meeting is held on Tuesday at 10:00 A.M. and every other Thursday at 5:00 P.M. The public is welcome.

Water Source

The Richard Renneker Water Treatment Plant withdraws water from three separate well fields. One well field is located on the east side of the Little Miami River, about one-half mile southwest of the Peters Cartridge Powder Plant and two miles north of Foster, Ohio. The nine wells draw water from the Little Miami River Buried Valley Aquifer. The second well field, having five wells, is located southeast of the intersection of Ohio State Route 48 and Mason-Morrow-Millgrove Road in South Lebanon. The third wellfield is located in South Lebanon on the south side of the Little Miami River. The second and third wellfields are bounded on the north and east sides by Turtle Creek, on the south by the Little Miami River, and on the west by Ohio Route 48. This is the origin of the Shaker Creek Buried Valley Aquifer and the confluence of the Little Miami River Buried Valley Aquifer. The treatment process at the plant consists of iron and manganese removal by aeration, filtration, and the addition of fluoride and chlorine. The aquifers that supply the Richard Renneker wellfields have been determined to have a high susceptibility to contamination due to the presence of significant potential contaminate sources in the protection are. However, there is no evidence to suggest that ground water has been impacted by significant levels of chemical contaminants from human activities. The source water assessment report can be found at <http://wwwapp.epa.ohio.gov/gis/swpa/OH8301512.pdf>. The Richard Renneker Water System also has interconnections for emergency backup purposes. These connections are as follows:

- 17562 State Route 48, South Lebanon, Ohio with Warren County Water (Franklin Area System).
- 3812 Socialville-Foster Road, Mason, Ohio with Greater Cincinnati Water Works.

During the year, the Richard Renneker System draws water from the Franklin Area Water System. Water is used each day during 2018. On average 105,000,000 gallons were used. The Franklin Area water quality report can be found on the website (www.co.warren.oh.us) or by calling the main office of the Warren County Water Department.

Sources of Drinking Water Contamination

The sources of drinking water (both tap water and bottled water) included rivers, lakes, streams, pond, 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 results 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 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 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)**.

About Your Drinking Water

The EPA requires sampling to ensure drinking water safety. The Richard Renneker Water System conducted sampling for (Bacteria, Nitrate, Synthetic Organic Chemicals (SOC Group 1), Copper and Lead, plus Disinfection by-Products) during 2018. 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, are more than one year old.

License

The Richard Renneker Water System currently has an unconditioned license to operate.

Whom to Contact

For further information about water quality, contact the Warren County Water and Sewer Department, Hours of operation are 8:00 AM - 5:00 PM, Monday through Friday.

Main Office	(513)695-1377	
Superintendent of Operations	(513) 683-3687	FAX (513) 697-1752
Laboratory Supervisor	(513) 583-3091	FAX (513) 583-3093

WEB SITE: <http://www.co.warren.oh.us/>

Send correspondence to: **Warren County Water and Sewer, PO Box 530, Lebanon, OH 45036-0530**

Water Quality Tables

An Explanation of the Water Quality Data Tables

This report is based upon tests conducted by the Warren County Water Laboratory and its contract laboratory. Terms used in the Water Quality Tables and in other parts of this report are defined here:

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.

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

(MRL): Minimum Reporting Limit

ppm: parts per million

ppb: parts per billion

ug/L: micrograms per liter

mg/L: milligrams per liter

f/l: fiber per liter

pCi/L: parts per trillion per liter

n/r: not regulated

"<": Symbol that means less than

Compliance Monitoring and Disinfection Requirements 2018

Substance	Highest Level Detected	Range	Violation	MCL	Ideal Goals (MCL)	Sources of Substances
Fluoride (mg/L)	1.11	0.8 -1.30	No	4	4	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories.
Chlorine (mg/L)	1.6	0.2 - 2.0	No	4	4	Element used for disinfection
**Total Coliform Monitoring	2	n.a	No	None	None	Safely removed using chlorine. 496 samples taken with two total coliform positive, e.coli <i>negative</i> sample. Resampling conducted per Ohio EPA rule.
Water Hardness	20	n.a.	No	n.a	n.a.	Dissolved mineral salts, mostly calcium and magnesium carbonate and bicarbonates

** July 11, 2018, the Richard Renneker Water System had a routine bacteria sample reported as Total Coliform Positive. As required by the Ground Water Rule, our laboratory staff collected three system samples and two source water samples. Repeat samples reported as Total Coliform Negative. The laboratory staff followed the Ground Water Rule.

** On September 17, 2018, the Richard Renneker Water System had a routine bacteria sample reported as Total Coliform Positive. As required by the Ground Water Rule, our laboratory staff collected three system samples and four source water samples. All source water samples were reported as Total Coliform Negative. One of the repeat samples reported as Total Coliform positive / E.Coli Negative. The laboratory staff followed the Ground Water Rule and resampled three system samples and four source water samples. All samples reported as Total Coliform negative/ E.coli negative.

All water systems are required to begin compliance with the new rule (Revised Total Coliform Rule, April 1, 2016). The new rule maintains the purpose to protect public health by ensuring the integrity of the drinking water distribution system and monitoring for the presence of total coliform bacteria, which includes E. coli bacteria. The U.S. EPA

anticipates greater public health protection under the new rule, as it requires water systems that are vulnerable to microbial contamination to identify and fix problems. As a result, under the new rule there is no longer a maximum contaminant level violation for multiple total coliform detections. Instead, the new rule requires water systems that exceed a specified frequency of total coliform occurrences to conduct an assessment to determine if any significant deficiencies exist. If found, these must be corrected by the Public Water System.

Action Levels (AL) control Copper and Lead. Samples are collected and ranked by how much lead or copper they contain. The 90th percentile of each ranking is determined, and if it exceeds the Action Level, specific corrective actions are required. **Thirty samples were collected in 2018.**

Substance	Detected	Range	MCL	Ideal Goals (MCLG)	Violation	Number of Samples Greater Than Action Level	Sources
Copper	.232 mg/L 90 th percentile	0 to .672 mg/L	AL =1.3 mg/L	1.3 mg/L	No	0	Piping used in distribution system and house hold plumbing
Lead	6.27 ppb 90 th percentile	0 to 13.4 ppb	AL =15 ppb	0	No	0	Piping used in distribution system and house hold 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 Richard Renneker Water System 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. For more information on lead in drinking water, testing methods, and steps you can take to minimize exposure: Safe Drinking Water Hotline at <http://www.epa.gov/safewater/lead>, and Ohio EPA: Learn About Lead: <http://epa.ohio.gov/pic/lead.aspx>.”

The tables below list the drinking water contaminants detected between January 1 and December 31, 2018. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk

Richard Renneker Water System monitoring requirement results 2018

Substance	Highest Level Detected	Range	Violation	MCL	Ideal Goals(M CLG)	Sources of Substances
Nitrogen, Nitrate-Nitrite (ppm)	.855	n.d.-.855	No	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
Total Trihalo-methanes (TTHM) (ppb)	25.96	13 to 25.96	No	80	0	By-products of drinking water chlorination. Form when naturally occurring organic matter reacts with chlorine and other disinfectants
Bromodichloromethane (ppb)	7.65	3.61 to 7.65	No	80	0	By-products of drinking water chlorination. Form when naturally occurring organic matter reacts with chlorine and other disinfectants
Bromoform (ppb)	4.08	2.35 to 4.08	No	80	0	By-products of drinking water chlorination. Form when naturally occurring organic matter reacts with chlorine and other disinfectants
Chloroform (ppb)	5.04	2.08 to 5.04	No	80	0	By-products of drinking water chlorination. Form when naturally occurring organic matter reacts with chlorine and other disinfectants
Dibromochloromethane (ppb)	9.19	4.96 to 9.19	No	80	0	By-products of drinking water chlorination. Form when naturally occurring organic matter reacts with chlorine and other disinfectants
Total HAA5 Haloacetic Acid (ppb)	4.67	1.95 to 4.67	No	60	0	By-products of drinking water Chlorination. Are formed when chlorine reacts with naturally occurring organic matter
Bromochloroacetic acid (ppb)	2.61	1.36 to 2.61	No	60	0	By-products of drinking water Chlorination. Are formed when chlorine reacts with naturally occurring organic matter
Dibromoacetic acid (ppb)	2.92	1.95 to 2.92	No	60	0	By-products of drinking water Chlorination. Are formed when chlorine reacts with naturally occurring organic matter
Dichloroacetic acid (ppb)	1.75	n.d. to 1.75	No	60	0	By-products of drinking water Chlorination. Are formed when chlorine reacts with naturally occurring organic matter
Monobromoacetic acid (ppb)	<1.0	<1.0	No	60	0	By-products of drinking water Chlorination. Are formed when chlorine reacts with naturally occurring organic matter
Monochloroacetic acid (ppb)	<2.0	<2.0	No	60	0	By-products of drinking water Chlorination. Are formed when chlorine reacts with naturally occurring organic matter
Trichloroacetic acid (ppb)	<1.0	<1.0	No	60	0	By-products of drinking water Chlorination. Are formed when chlorine reacts with naturally occurring organic matter

Soc Group 1 collected in 2018

Substance	Highest Level Detected	Range of Detection	MCL	Ideal Goals (MCLG)	Violation	Sources of Substance
ALACHLOR (LASSO)	<0.2 ppb	<0.2ppb	2 ppb	0	No	Runoff from Herbicide
Simazine	<0.35 ppb	<0.35 ppb	4 ppb	4 ppb	No	Runoff from Herbicide
Atrazine	<0.3 ppb	<0.3 ppb	3 ppb	3 ppb	No	Runoff from Herbicide

Warren County Water and Sewer Department

CONSUMER CONFIDENCE REPORT (CCR)

2018 Water Quality Report for Sharts Road System

PWSID# 8346912

The Warren County Water Department has prepared the following information for the Sharts Road Water System. Included in this report is general health information, water quality test results, how to participate in decision concerning your drinking water and water system contacts. This annual water quality report describes the water source, lists test results, and contains important information about drinking water from the previous year. Reporting is a requirement of the Safe Drinking Water Act of 1996. We encourage public participation in our community's future. The Warren County Board of Commissioners meeting is held on Tuesday at 10:00 A.M. and every other Thursday at 5:00 P.M. The public is welcome.

Water Source

Warren County purchases its water for the Sharts Road Area from the City of Springboro (Veolia Water). The City of Springboro obtains its public drinking water supply from the buried sand and gravel aquifers associated with the Great Miami River. The City of Springboro has five (5) wells to draw water from the aquifer. The wells are located on the west side of the Great Miami River at 8858 Dayton-Oxford Road. The Water Treatment Plant and well field is south of Chautauqua and borders the Village of Carlisle. Well water is pumped directly to the water treatment plant, where the water is filtered and treated with chlorine and fluoride. The drinking water source assessment report can be found at <http://wwwapp.epa.ohio.gov/gis/swpa/OH8301412.pdf>.

Sources of Drinking Water Contamination

The sources of drinking water (both tap water and bottled water) included rivers, lakes, streams, pond, 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 results 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 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 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)**.

About Your Drinking Water

The EPA requires sampling to ensure drinking water safety. The Sharts Road Water System conducted sampling for (Bacteria and Disinfection By-Products) during 2018. 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, are more than one year old.

License

The Sharts Road System currently has an unconditioned license to operate.

Whom to Contact

For further information about water quality, contact the Warren County Water and Sewer Department. Hours of operation are 7:30 AM and 4:30 PM, Monday through Friday:

Main Office (513)695-1377
Superintendent of Operations (513)683-3687 FAX (513)697-1752
Laboratory Supervisor (513)583-3091 FAX (513) 583-3093
WEB SITE: <http://www.co.warren.oh.us/>

Send correspondence to: **Warren County Water and Sewer, PO Box 530, Lebanon, OH 45036-0530**

Water Quality Tables

An Explanation of the Water Quality Data Tables

This report is based upon tests conducted by the City of Springboro and Warren County's Water Laboratory. Terms used in the Water Quality Tables and in other parts of this report are defined here.

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.

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

ppm: parts per million

ppb: parts per billion

ug/L: micrograms per liter

mg/L: Milligram per liter

f/l: fiber per liter

pCi/L: parts per trillion per liter

n. r.: not regulated

"<": Symbol that means less than

**** Collected by the Springboro Water Department. (Veolia Water)**

***Collected by the Warren County Water Department**

Compliance Monitoring 2018

Substance	Violation	Level Detected	Range of Detection	MCL	MCLG	Source of Substance
**Fluoride mg/L	No	1.09	0.54 - 1.09	4	4	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories.
**Nitrate mg/L	No	0.668	0.668	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
*Total Coliform Monitoring	No	None	None	0	0	Safely removed using chlorine. No coliform bacteria detected in 12 samples collected in 2018
*Chlorine Residual mg/L	No	1.8	0.2 - 2.0	4.0	4.0	Element used for disinfection

The table below lists all the drinking water contaminants that were detected between January 1 and December 31, 2018. The presence of the contaminants in the water does not necessarily indicate that the water poses a health risk.

Sharts Road- Required Monitoring information - 2018

Substance	Violation	Highest Level Detected	Range of Detection	MCL	Ideal Goals (MCLG)	Sources of Substances
*Total Trihalomethane (ppb)	No	23.57	23.57	80	0	By-products of drinking water chlorination.
Bromodichloromethane (ppb)	No	7.050	7.050	80	0	By-products of drinking water chlorination.
Bromoform (ppb)	No	2.230	2.230	80	0	By-products of drinking water chlorination.
Chloroform (ppb)	No	8.160	8.160	80	0	By-products of drinking water chlorination.
Dibromochloromethane (ppb)	No	6.130	6.130	80	0	By-products of drinking water chlorination.
*HAA5 (Total Haloacetic Acids) (ppb)	No	3.568	3.568	60	0	By-products of drinking water Chlorination.
Bromochloroacetic Acid (ppb)	No	2.002	2.002	60	0	By-products of drinking water Chlorination.
Dibchloroacetic Acid (ppb)	No	1.848	1.848	60	0	By-products of drinking water Chlorination.
Dibromoacetic Acid (ppb)	No	1.720	1.720	60	0	By-products of drinking water Chlorination.
Monobromoacetic Acid (ppb)	No	<1.0	<1.0	60	0	By-products of drinking water Chlorination.
Monochloroacetic Acid (ppb)	No	<1.0	<1.0	60	0	By-products of drinking water Chlorination.
Trichloroacetic Acid (ppb)	No	<1.0	<1.0	60	0	By-products of drinking water Chlorination.

Action Levels (AL) control Copper and Lead. Samples are collected and ranked by how much lead or copper they contain. The 90th percentile of each ranking is determined. If the 90th percentile exceeds the Action Level, specific corrective actions are required. None of our 90th percentiles exceeded the Action Levels. **Warren County collected five (5) samples during 2017.**

Substance	Detected	Range of Detection	MCL	MCLG	Sources	Number of Samples Greater Than Action Level
Copper	0.142 mg/l 90 th percentile	<50.0- 0.191 mg/L	AL = 1.3 mg/L	1.3mg/L	Piping used in distribution system and house hold plumbing	0
Lead	<5.0 ppb 90 th percentile	<5.0 ppb	AL = 15 ppb	0 ppb	Piping used in distribution system and house hold plumbing	0

“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 Sharts Road Water System 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. For more information on lead in drinking water, testing methods, and steps you can take to minimize exposure: Safe Drinking Water Hotline at <http://www.epa.gov/safewater/lead>, and Ohio EPA: Learn About Lead: <http://epa.ohio.gov/pic/lead.aspx>.”

Warren County Water and Sewer Department

CONSUMER CONFIDENCE REPORT (CCR)

2018 Water Quality Report for the Socialville Water System

PWSID# 8304203

The Warren County Water Department has prepared the following information for the Socialville Water System. Included in this report is general health information, water quality test results, how to participate in decision concerning your drinking water and water system contacts. This annual water quality report describes the water source, lists test results, and contains important information about drinking water from the previous year. Reporting is a requirement of the Safe Drinking Water Act of 1996. We encourage public participation in our community's future. The Warren County Board of Commissioners meeting is held on Tuesday at 10:00 A.M. and every other Thursday at 5:00 P.M. The public is welcome.

Water Source

Water for the Socialville Water System is purchased by Warren County from Greater Cincinnati Water Works. Water is withdrawn from both the Ohio River and the Great Miami Aquifer. Water from the Ohio River is treated at the Miller Treatment Plant which is located on the east side of Hamilton County. Water is also pulled from 13 wells in the Great Miami Aquifer located in the southern part of Butler County. This water is treated at the Bolton Treatment Plant. The Socialville Water System has an emergency interconnect located on Socialville-Foster Road. This is an interconnection with the Warren County Richard Renneker Water System. The source water assessment can be found at <http://www.wapp.epa.ohio.gov/gis/swpa/OH3102612.pdf>.

Sources of Drinking Water Contamination

The sources of drinking water (both tap water and bottled water) included rivers, lakes, streams, pond, 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 results 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 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 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)**.

About Your Drinking Water

The EPA requires sampling to ensure drinking water safety. The Socialville Water System conducted sampling for (Bacteria, Nitrate, Synthetic Organic Chemicals (SOC Group 1), Copper and Lead, plus Disinfection by-Products) during 2018. 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, are more than one year old.

License

The Socialville Water System currently operates with an unconditioned license to operate.

Whom to Contact

For further information about water quality, contact the Warren County Water and Sewer Department. Hours of operation are 7:30 AM - 4:30 PM, Monday through Friday:

Main Office (513)695-1377
Superintendent of Operations (513) 683-3687 FAX (513) 697-1752
Laboratory Supervisor (513) 583-3091 FAX (513) 583-3093
WEB SITE: <http://www.co.warren.oh.us/>

Send correspondence to: **Warren County Water and Sewer, PO Box 530, Lebanon, OH 45036-0530**

Water Quality Tables

An Explanation of the Water Quality Data Tables

This report is based upon tests conducted by the Cincinnati Water Works and the Warren County Water Laboratory. Terms used in the Water Quality Tables and in other parts of this report are defined here.

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.

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

(MRL): Minimum Reporting Limit

ppm: parts per million

ppb: parts per billion

ug/L: micrograms per liter

mg/L: Milligram per liter

f/l: fiber per liter

pCi/L: parts per trillion per liter

n/r: not regulated

“<”: Symbol that means less than

Compliance Monitoring and Disinfection Requirements. Warren County Water Department 2018

Substance	Highest Level Detected	Range of Detection	Violation	MCL	Ideal Goals (MCLG)	Sources of Substances
Chlorine (mg/L)	1.2	0.2 - 2.0	No	4	4	Element used for disinfection
Total Coliform Monitoring	None	n.a.	No	None	None	Safely removed using chlorine. 180 samples taken with no positive coliforms

As shown in above table, no routine samples tested positive for coliforms. There is a revised Total Coliform Rule (RTCR). All water systems were required to begin compliance with a new rule, the Revised Total Coliform Rule, on April 1, 2016

The tables below list the drinking water contaminants detected between January 1 and December 31, 2018. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. These Substances were tested by Cincinnati Water Works

Regulated Contaminants: Contaminants subject to an MCL, Action Level, or (TT) Treatment Technique

Substance	Miller Plant (Ohio River)		Bolton Plant (Great Miami River)		MCL	Ideal Goals(M CLG)	Violation	Sources
	Highest Level Detected	Range of Detection	Highest Level Detected	Range of Detection				
Fluoride (mg/L)	0.87	0.68-0.98	0.88	0.70-0.99	4	4	No	Erosion of natural deposits; Promote strong teeth.
Nitrate (ppm)	1.04	0.40-1.04	1.24	n.a.	10	10	No	Runoff from fertilizer; leaching from septic tanks, sewage; erosion of natural deposits.
Total Organic Carbon	2.07	1.85-3.43	nr	nr	TT ¹	n.a.	No	Naturally present in the environment.
Turbidity (NTU)	0.25 100% < 0.3 NTU	0.03-0.25	nr	nr	TT ¹ < 1 NTU max and TT2 < 0.3 NTU 95% of the time	n.a.	.No	Soil erosion runoff.
Barium (ppm)	0.032	n.a.	0.013	n.a.	2	2	No	Erosion of natural deposits; Discharge of drilling waste and metal refineries.
Trihalomethanes (ppb)	56.5	11.9-65.9	56.5	11.9-65.9	80	0	No	Byproduct of drinking water chlorination
Haloacetic Acids (ppb)	11.6	4.73-17.0	11.6	4.73-17.0	60	0	No	Byproduct of drinking water chlorination
Lead (ppb)	90 th percentile 7.28	nd-44.7	90 th percentile 7.28	nd-44.7	15	0	No	Corrosion of household plumbing; natural deposits
Copper (ppm)	90 th percentile 0.024	nd-0.09	90 th percentile 0.024	nd-0.09	1.3	0	No	Corrosion of household plumbing systems; erosion of natural deposits; leaching from

****From Greater Cincinnati Water Works, “7 out of 158 samples tested during the most recent compliance period were > the Action Level for Lead”.**

**** From Greater Cincinnati Water Works, “0 out of 158 samples tested during the most recent compliance period were > the Action Level for Copper”.**

Note1. The Ohio EPA requires monitoring certain contaminants once per year. The value is the maximum detected concentration.

Turbidity is a measure of the cloudiness of water and is an indication of the effectiveness of the filtration system. The turbidity limit set by the EPA is 0.3 NTU in 95% of the samples analyzed each month and shall not exceed 1 NTU at any time. As reported above, the Socialville Water System’s highest recorded turbidity result for 2018 was 0.25 NTU and lowest monthly percentage of samples meeting the turbidity limits was 100%.

¹ The value reported under “highest compliance level detected” for TOC is the lowest ratio between percentages of TOC actually removed to the percentage of TOC required to be removed. A value of <1 indicates that the water system is in compliance with TOC removal requirements. A value of >1 indicates a violation of the TOC removal requirements.

TT = A required process intended to reduce the level of a contaminant in drinking water

Results of GCWW Voluntary Monitoring for Cryptosporidium: GCWW has tested for Crypto in treated waters and never detected it. GCWW also tested for Crypto in the Ohio River surface water and it was found in 0 of 22 samples during 2015.

Sodium: Tested as water leaves treatment plants Miller Plant: 33mg/l
Bolton Plant: 31mg/l.

Average Water Hardness: Miller Plant - 8 grains per gallon (137 mg/L)
Bolton Plant - 10 grains per gallon (171 mg/l)

Unregulated Contaminants for which the EPA requires monitoring 2018 unless noted other wise

Substance	Miller Plant		Bolton Plant		Violation	MCLG	Sources of Substances
	Average Level Detected	Range of Detection	Average Level Detected	Range of Detection			
Chloroform (ppb)	12.8	1.69-37.6	12.8	1.69-37.6	n.a.	70	Byproduct of drinking water disinfection
Bromodichloromethane (ppb)	9.79	1.98-18.1	9.79	1.98-18.1	n.a.	0	Byproduct of drinking water disinfection
Dibromochloromethane (ppb)	9.87	3.79-17.9	9.87	3.79-17.9	n.a.	60	Byproduct of drinking water disinfection
Bromoform (ppb)	4.31	.55-10.9	4.31	.55-10.9	n.a.	0	Byproduct of drinking water disinfection.
Monochloroacetic Acid (ppb)	n/d	n/d-n/d	n/d	n/d-n/d	n.a.	30	Byproduct of drinking water disinfection.
Monobromoacetic Acid (ppb)	2.81	1.16-5.12	2.81	1.16-5.12	n.a.	n.a.	Byproduct of drinking water disinfection.
Dibchloroacetic Acid (ppb)	4.82	1.26-10.1	4.82	1.26-10.1	n.a.	0	Byproduct of drinking water disinfection.
Trichloroacetic Acid (ppb)	2.57	1.03-4.79	2.57	1.03-4.79	n.a.	20	Byproduct of drinking water disinfection.
Dibromoacetic Acid (ppb)	2.63	1.01-4.61	2.63	1.01-4.61	n.a.	n.a.	Byproduct of drinking water disinfection
Sulfate (ppm)	57	49-67	49	46-51	n.a.	n.a.	Erosion of natural deposits
Chlorate (ppb) (2013)	23	n/d – 41	n/d	n/a	n.a	n.a.	Detected during Unregulated Contaminant monitoring
Hexavalent Chromium Dissolved (ppb) (2013)	0.071	.048-.099	0.21	0.2-0.22	n.a.	n.a.	Detected during Unregulated Contaminant monitoring
1,4-Dioxane (ppb) (2013)	0.326	n/d-.575	0.545	0.276-0.814	n.a.	n.a.	Detected during Unregulated Contaminant monitoring
Molybdenum (ppb) (2013)	1.6	1.0-2.9	4.2	3.5-4.9	n.a.	n.a.	Detected during Unregulated Contaminant monitoring
Strontium (ppb) (2013)	204	170-240	170	160-180	n.a.	n.a.	Detected during Unregulated Contaminant monitoring
Vanadium (ppb) (2013)	0.26	nd-0.56	0.64	0.60-0.72	n.a.	n.a.	Detected during Unregulated Contaminant monitoring

Action Levels (AL) control copper and lead. Samples are collected and ranked by how much lead or copper they contain. The 90th percentile of each ranking is determined. If the 90th percentile exceeds the Action Level, specific corrective actions are required. None of our 90th percentiles exceeded the Action Levels from the 30 samples collected from the Socialville System residences in 2018.

Substance	Highest Level Detected	Range of Detection	MCL	Ideal Goals (MCLG)	Violation	Sources	Number of Samples Greater Than Action Level
Copper (ppm)	90 th percentile 0.146	.00514-.555	1300	0	No	Piping used in distribution system. House plumbing	0
Lead (ppb)	90 th percentile 3.08	<.5-14	AL =15	0	No	Piping used in distribution system. House plumbing	0

“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. Socialville Water System 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. For more information on lead in drinking water, testing methods, and steps you can take to minimize exposure: Safe Drinking Water Hotline at <http://www.epa.gov/safewater/lead>, and Ohio EPA: Learn About Lead: <http://epa.ohio.gov/pic/lead.aspx>.”

Unregulated Contaminants for which the EPA required monitoring under the Information Collection Rule to determine where certain substances occur and whether or not the substances should be regulated. Stage II Disinfection by-products monitored by Warren County Water Department. **2018**

Substance	Highest Level Detected	Range of Detection	Violation	MCL	Ideal Goals (MCLG)	Sources of Substances
Total Trihalomethanes (TTHM) (ppb)	47.58	31.4-47.58	No	80	0	By-products of drinking water chlorination.
Bromodichloromethane (ppb)	11.34	6.51 – 11.34	No	80	0	By-products of drinking water chlorination.
Bromoform (ppb)	11.84	<0.5-11.84	No	80	0	By-products of drinking water chlorination.
Chloroform (ppb)	26.06	2.23 – 26.06	No	80	0	By-products of drinking water chlorination.
Dibromochloromethane (ppb)	18.67	2.910 – 18.67	No	80	0	By-products of drinking water chlorination.
Total Haloacetic acids (HAA5) (ppb)	23.08	1.8 – 23.08	No	60	0	By-products of drinking water chlorination.
Bromochloroacetic acid (ppb)	5.994	1.3 – 5.994	No	60	0	By-products of drinking water chlorination.
Dibromoacetic acid (ppb)	5.081	<1.0 – 5.081	No	60	0	By-products of drinking water chlorination
Dichloroacetic acid (ppb)	14.68	<1.0 – 14.68	No	60	0	By-products of drinking water chlorination.
Monobromoacetic acid (ppb)	<1.0	<1.0	No	60	0	By-products of drinking water chlorination.
Monochloroacetic acid (ppb)	<2.0	<2.0	No	60	0	By-products of drinking water chlorination.
Trichloroacetic acid (ppb)	6.217	<1.0 – 6.217	No	60	0	By-products of drinking water chlorination

Additional Information

To ensure that tap water is safe to drink, the EPA prescribes limits on the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The sources of drinking water (including 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 storm 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 stormwater 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, (5) radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities, (6) Cryptosporidium is a microscopic organism that, when ingested, can result in diarrhea, fever, and other intestinal symptoms. Most healthy people can overcome the disease within a few weeks. However, immuno-compromised people are at greater risk of developing life-threatening illness. We encourage immuno-compromised persons to consult their doctor about precautions to take to avoid infection. Cryptosporidium must be ingested to cause disease, and it can be spread through means other than drinking water.

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).