

We're pleased to present to you this year's Annual Drinking Water Quality Report. This report is designed to inform you about the quality water and services we deliver to you every day. Our goal is to provide you with a safe and dependable supply of drinking water, and we want you to understand, and be involved in, the efforts we make to continually improve the water treatment process and protect our water resources.

#### What is the reason for this report?

The 1996 Safe Drinking Water Act Amendments require that, beginning in October 1999, all community water systems provide customers with an annual report on the quality of their drinking water.

#### Where does our water come from?

The City of Paris uses Stoner Creek, a surface water, as its sole source of drinking water. Stoner Creek originates in Clark County as does Strodes Creek which is a major tributary of Stoner Creek. Both are part of the Licking River drainage basin. Our raw water supply is relatively good compared to some supplies as there is not a lot of industrial pollution. However, we are plagued by runoff from farm land. The fertilizers from the runoff can cause heavy algae bloom which in turn creates treatment problems. There are four dams on our raw water source with a total gross storage of 378 million gallons. Plant personnel maintain the dams that the City of Paris controls on Stoner Creek. There have not been any major problems with drought since two of our dams were raised in the 1950's.

#### Is our drinking water safe?

Yes. To ensure that tap water is safe to drink, U.S. EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Our drinking water is monitored daily at the plant and in the distribution system to ensure proper treatment. We also send water samples to our contracted certified lab to check for over 100 possible contaminants. Those detected are listed with their results in this brochure.

#### SPANISH DISCLAIMER:

*Este informe contiene informacion muy importante.  
Traduzcalo o hable con alguien que to entienda bien.*

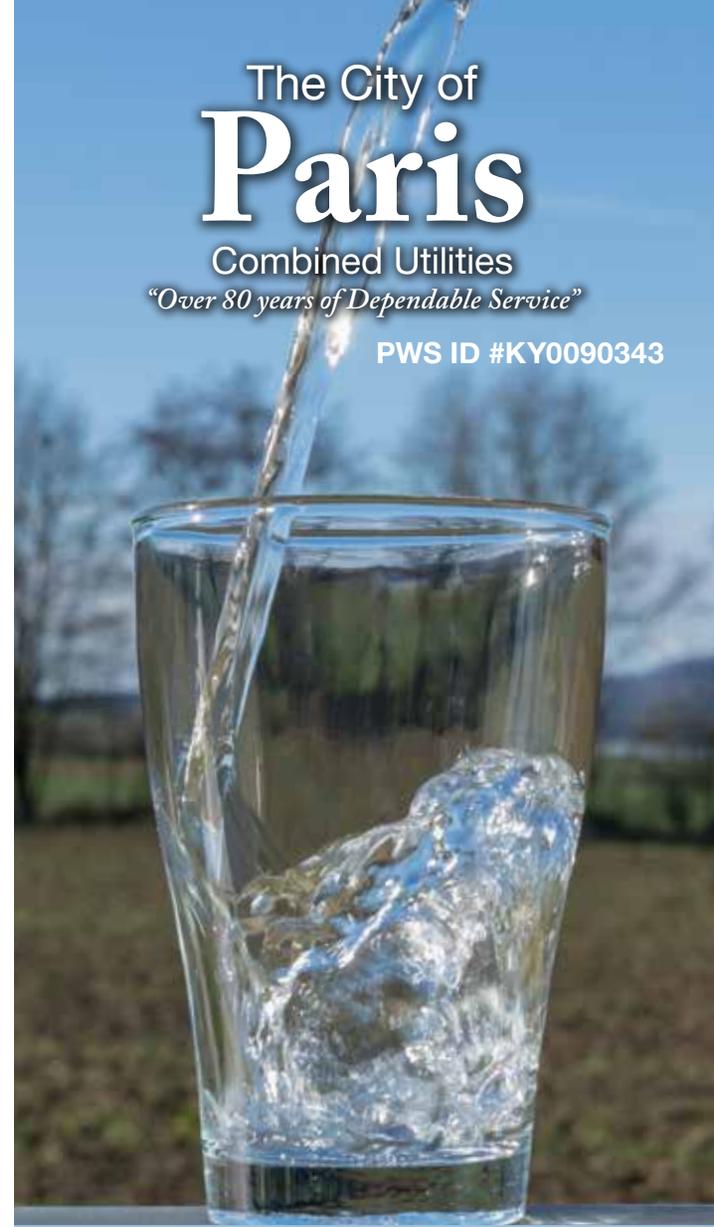
The City of Paris  
Combined Utilities  
525 High Street  
Paris, KY 40361

# The City of Paris

Combined Utilities

*"Over 80 years of Dependable Service"*

PWS ID #KY0090343



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## What contaminants can be in our drinking water?

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. 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. 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).

The sources of drinking water (both tap and bottled water) includes 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:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agriculture livestock operations and wildlife. Example: Coliforms are bacteria which are naturally present in the environment and are used as an indicator that other, potentially-harmful bacteria may be present.
- 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. Example: Some people who drink water containing barium in excess of the maximum contaminant level over many years could experience and increase in their blood pressure.
- Organic 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 residential uses. Example: Some people

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

- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities Example: Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the maximum contaminant level over many years may have an increased risk of getting cancer.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, stormwater runoff, and residential uses. This is included in synthetic organic contaminants and the unregulated contaminants.

## Am I at risk?

All 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 the water poses a health risk. However, 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 small amounts of contamination. These people should seek advice about drinking water from their health care providers. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791. In addition, EPA/CDC guidelines on appropriate means to lessen the risk of infection by microbiological contaminants are also available from the Safe Drinking Water Hotline.

## Lead and drinking water

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from

materials and components associated with service lines and home plumbing. We are responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>. The City of Paris is in compliance with all regulations related to lead and copper in its drinking water.

## How can I become more involved?

The water system is municipally owned which means that it is owned by the City of Paris. It is managed by the plant superintendent who reports to the city manager who in turn reports to the Mayor and city commissioners. If you have billing or service questions, help can be obtained by calling the city office at (859)987-2110. Technical questions about water treatment can be directed to the plant superintendent by calling (859)987-2118. If you need emergency service after hours or on weekends or holidays, call central communications at (859)987-2100. The city commission meetings are held every second and fourth Tuesdays of the month unless otherwise announced.

The meetings begin at 9:00 a.m. and are held at the commission chambers of the Paris Municipal Center, 525 High Street. For additional information about the City of Paris and the Combined Utilities, please visit our website at [www.paris.ky.gov](http://www.paris.ky.gov).



The City of Paris Combined Utilities routinely monitor for constituents in your drinking water according to Federal and State laws. The test results table shows the results of our monitoring for the period of January 1st to December 31st, 2017. In the table you might find terms and abbreviations you are not familiar with. Most samples are the most recent results through 12/31/2017 and in accordance with administrative regulation 401 KAR Chapter 8. Testing compliance periods are in three(3) years periods and are part of a nine(9) year cycle which runs 11/1/2011 to 12/31/2019. To help you better understand these terms we've provided the following definitions:

## Definitions

- **Action Level (AL)** – the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- **Maximum Contaminant Level (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. Secondary MCLs are unenforceable guidelines for aesthetic quality of water.
- **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 Residual Disinfectant Level (MRDL)** – the highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
- **Maximum Residual Disinfectant Level Goal (MRDLG)** – the level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
- **NA** – not applicable.
- **Nephelometric Turbidity Unit (NTU)** – a unit of measurement for the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.
- **Parts per billion (ppb)** – micrograms per liter (µg/L) or one ounce in 7,800,000 gallons of water.
- **Parts per million (ppm)** – milligrams per liter (mg/L) or one ounce in 7,800 gallons of water.
- **NOV** – Violations issued by the Kentucky Division of Water.
- **RAA** – Running Annual Average is figured quarterly using the average of the most recent quarter added with the three (3) previous quarters and divided by four (4).
- **LRAA** – is the average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters.

MAXIMUM CONTAMINANT LEVEL (MCL'S) ARE SET AT VERY STRINGENT LEVELS. TO UNDERSTAND THE POSSIBLE HEALTH EFFECTS DESCRIBED FOR MANY REGULATED CONTAMINANTS, A PERSON WOULD HAVE TO DRINK 2 LITERS OF WATER EVERY DAY AT THE MCL LEVEL FOR A LIFETIME TO HAVE A ONE-IN-A-MILLION CHANCE OF HAVING THE DESCRIBED HEALTH EFFECT

## Regulated Substances

Substance (Unit)	MCL	MCLG	High-Low Range Detected	Highest Level Detected	Violations	Likely Source of Contamination	Sample Dates
Barium (ppm)	2	2	NA	0.02	None	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits	06/05/17
Chloramines (ppm)	MRDL-4	MRDLG-4	3.30-1.30	3.30	None	Water additive used to control microbes	Daily
Chlorine (ppm)	MRDL-4	MRDLG-4	2.90 - 0.30	2.90	None	Water additive used to control microbes	Daily
Fluoride (ppm)	4	4	NA	0.62	None	Erosion of natural deposits; discharge from fertilizer and aluminum factories. Water additive which promotes strong teeth when at optimum levels between 0.7 and 1.2 ppm	07/24/2017
Nitrate (as Nitrogen) (ppm)	10	10	NA	3.1	None	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.	03/28/17
Revised Total Coliform Rule	No MCL for Total Coliforms	No MCLG for Total Coliforms	0	0	None	Naturally present in the environment	20 per month
TOC* [Total Organic Carbon] (ppb)	TT	NA	0.62-3.33 <sup>1</sup>	1.4	None	Naturally present in the environment	Monthly
Turbidity (NTU)	TT (95% of monthly readings <0.3)	NA	0.4-0.94	98 (Lowest monthly % <0.3)	None	Soil runoff	Daily

\* TOC's are calculated figuring a ratio of actual percentage removed divided by the required percentage removed. To be in compliance the RAA ratio must be greater than or equal to 1.0.

<sup>1</sup> 3.33 detected in March, 2017.

## Lead and Copper Contaminants

Substance (Unit)	MCL	MCLG	90th Percentile	Number of Samples above Action Level	High-Low Range Detected	Violations	Likely Source of Contamination	Sample Dates
Lead (ppb)	15AL	0	3	1	2-16	None	Corrosion from household plumbing systems; erosion of natural deposits	08/2015
Copper (ppb)	1.3AL	1.3	0.14	0	0.006-0.53	None	Corrosion from household plumbing systems; erosion of natural deposits	08/2015

## Disinfection By-products

Substance (Unit)	MCL	MCLG	High-Low Range Detected	Highest LRAA	Violations	Likely Source of Contamination	Sample Dates
THAA5 [Haloacetic Acids] (ppb)	60	NA	10-72 <sup>2</sup>	47	Yes*	By-product of drinking water disinfection	01/31, 04/27, 07/19, 10/27
TTHM [Total Trihalomethanes] (ppb)	80	NA	16-56 <sup>3</sup>	42	Yes*	By-product of drinking water disinfection	01/31, 04/27, 07/19, 10/27

<sup>2</sup> 72 ppb detected on 7/19/17 during 3rd quarter testing. <sup>3</sup> 56 ppb detected on 7/19/17 during 3rd quarter testing. DBP= Disinfection by Products TTHM= Total Trihalomethane THAA= Total Haloacetic Acids

### IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER Monitoring Requirements Not Met for Paris Water Works

Our water system violated a drinking water standard over the past year. Even though this was not an emergency, as our customers, you have a right to know what happened and what we did to correct these situations.

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During compliance period 10/01/2017-12/31/2017 we failed to submit an adequate number of DBP samples for TTHM and THAA and therefore cannot be sure of the quality of our drinking water during that time.

What should I do?  
There is nothing you need to do at this time.

The table below lists the contaminant(s) we did not properly test for during the last year, how often we are supposed to sample for TTHM and THAA and how many samples we are supposed to take, how many samples we took, when samples should have been taken, and the date on which follow-up samples were (or will be) taken.

What is being done? The correct number of samples were taken, however one of the sample sites utilized was not a DBP compliant site. The correct sites have been documented and testing has resumed as scheduled.

The required number of samples were taken during the following compliance period 1/1/2018-3/31/2018 and found to be within compliance.

For more information, please contact Chad Smart at 859-987-2118 or City of Paris WTP 525 High St Paris, KY 40361

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by The City of Paris Water Treatment Plant.

State Water System ID#:KY0090343  
Date distributed: April 2018

Contaminant	Required sampling frequency	Number of samples taken	When samples should have been taken	When samples were taken	Required Number of Samples	When follow-up samples should have been taken	When follow up samples were taken
DBPs TTHM THAA	Quarterly	3	10/01/17-12/31/17	October 27, 2017	4	01/01/18-03/31/18	January 24, 2018

DBP= Disinfection by Products TTHM= Total Trihalomethane THAA= Total Haloacetic Acids

### General System Information

The plant is staffed by six full time operators who hold treatment licenses and four also have distribution license with the State of Kentucky. There is also a full-time laboratory technician to perform microbiological analysis in the plant as well as the distribution system. The laboratory is certified with the State Division of Water for microbiological analysis. Additional duties of the operators are; collecting distribution samples and servicing all valves and related equipment at the standpipe and the elevated tanks as well as in-plant maintenance. Paris has approximately 5,111 water meters with an estimated total population served of 15,333 as of December, 2016. With two elevated storage tanks and one standpipe, our distribution system has a total storage of 2.45 million gallons of water. There is approximately 150 miles of pipe in the distribution system. The system employs five full time distribution operators, one is State certified. Average use is 2.163 million gallons per day and the plant's total treatment capacity is 3.0 million gallons per day. We are operating at 72% of our total treatment capacity. A risk management plan as required by law was created in 1999 and updated in 2014 for the water treatment plant in the event that a chlorine leak should occur. The City of Paris Combined Utilities is a member of the American Water Works Association and its operators are members of the Kentucky Water and Wastewater Operators Association. Paris is also a member of the Bluegrass Water Supply Commission, a group consisting of regional municipalities that are working to resolve central Kentucky's water supply deficit.

### How is our water treated?

Water from Stoner Creek is pumped into the rapid mix by the raw water (low service) pumps. It is pumped in at a rate of 2,100 to 2,400 gallons per minute. This

flow rate is important in that all detention times throughout the treatment process are based on this flow rate. Here poly aluminum chloride or alum, and sodium permanganate are added and thoroughly mixed with the creek water. Dosages will vary depending on the water conditions. Detention time in this basin is one (1) minute.

It then flows into the coagulation basin where it is slowly mixed by two (2) mechanical paddles. As the water flows through, the chemicals reacting with the particulate matter starts to form what is known as floc particles. These particles continue to grow in size and mass as they continue through this basin. Carbon is added when needed in this basin for taste and odor control. Also, the sodium permanganate is reacting during this time to oxidize any metals (example: iron, manganese) that may be dissolved in the water as well as oxidizing other organic materials present. The detention time for this basin is forty (40) minutes. Chlorine is added for disinfection at the effluent (exit) of this basin.

The water then flows into the settling basins where the floc particles settle to the bottom of these basins. The settled water flows to the filters. The detention time of the settling basins is approximately four (4) hours.

There are four (4) filters that are called dual media rapid sand filters. They utilize both sand and anthracite as the filtering medium. The filters are equipped with rate of flow gauges and controllers that maintain a constant and balanced flow through each filter. These filters retain any particles that may not have been removed in the settling basins. They filter at a rate of two (2) gallons per square foot per minute. Chemicals added in the filter effluent are fluoride, ammonia and chlorine. Caustic soda is added to help control the pH

(pH indicates whether the water is an acid or a base).

When the water leaves the filters, it enters the clearwells where it is stored on site. The treatment process is complete other than the contact time with the post chlorine or chloramines which is added after the filters. By the time the finished water reaches the high service pumps, the chlorine contact time is complete and the water is then pumped into the distribution system where it reaches the City of Paris customers. Water is stored in a standpipe and the two (2) elevated tanks that are part of the distribution system. Samples are taken daily and tested in our lab to help ensure the quality of the end product.

### Chemicals Used

**Chlorine** - This is used to disinfect the water by inactivating harmful bacteria.

**Sodium Permanganate** - This is used to oxidize metals such as iron and/or manganese and other organics. It also helps control taste and odor problems.

**Powdered Carbon** - Also called PAC. (powdered activated carbon) This is added in slurry form to help reduce taste and odor problems through adsorption.

**Caustic Soda** - The chemical name is sodium hydroxide. This is used occasionally for pH control.

**Fluoride** - The chemical name is hydrofluosilicic acid. Its sole purpose is to prevent tooth decay.

**Ammonia** - Also called anhydrous ammonia. This combines with chlorine to form chloramines.

**Poly Aluminum Chloride** - The chemical name is aluminum chloride hydroxide sulfate. This is used to help form floc which helps settle the particulate matter out of the water.

### Cryptosporidium

Cryptosporidium is an intestinal parasite that is sometimes found in surface water sources such as Stoner Creek. It can cause intestinal flu-like symptoms that could possibly be a severe health risk to immunocompromised individuals. Healthy individuals should recover from this infection with no problems. Paris began monthly testing of Stoner Creek for cryptosporidium in June of 2005 with no detections occurring in 2005, 2006 or 2007.

### Source Water Assessment and Protection Plan (SWAPP)

Following is a summary of the Paris system's susceptibility to contamination, which is part of the completed Source Water Assessment Protection Plan (SWAPP). The completed plan is available for inspection. Please call Chad Smart at the Paris Water Plant at (859)987-2118 to make arrangements. An analysis of the susceptibility of the Paris Water Supply to contamination indicates that this susceptibility is generally moderate. However there are a few areas of high concern. Several highway bridges in the immediate vicinity of the intake may pose a potential threat to the water supply. An accidental release of contaminants from any of these sites could reach the intake. The same is true for railroads that occur between KY 627 and KY 1678 near Kennedy Creek. In addition, areas of row crops, municipal sewer lines, A KPDES permitted discharger and a waste generator and/or transporter are causes for concern. Finally, there are numerous permitted operations and activities and other potential contaminant sources of moderate concern within the greater watershed that cumulatively increase the potential for the release of contaminants with in the area. These potential contaminant sources include everything from septic systems, to major roads to hazardous chemical use.