

**Annual Drinking Water Quality Report
Reporting Year 2003
City Of Nicholasville**

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 constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water. **This report contains important information about your drinking water. Translate it, or speak with someone who understands it. Este informe contiene informacion muy importante sobre su agua potable. Traduzcalo o hable con alguien que lo entienda bien.**

This report shows our water quality and what it means. If you have any questions about this report or concerning your water utility, please contact **Thomas Calkins at 859-885-9473 or Gregory Hobson at 859-885-6974**. We want our valued customers to be informed about their water utility. If you want to learn more, please attend any of the Nicholasville Commissioner's regularly scheduled meetings. They are held on the second and fourth Thursday of each month at 5:00 PM at 517 North Main.

Nicholasville's water treatment plant draws surface water from Pool 8 of the Kentucky River. The facility uses conventional treatment processes consisting of coagulation, sedimentation, filtration and disinfection, along with corrosion control treatment and fluoridation (for dental protection). The final Kentucky River source water assessment was completed in 2003. It is available for inspection at the Nicholasville Public Utilities Building at 517 North Main St. in Nicholasville, or at the Nicholasville Water Treatment Plant at 595 Water Works Rd.

An analysis of the susceptibility of the Nicholasville water treatment plant's water supply to contamination indicates that its susceptibility is generally moderate. There are, however, a few areas of high concern. A few areas pose an immediate threat to the plant's intake in the event of accidental release of contaminants at these particular sites. There are also numerous permitted operations and activities of moderate concern within the watershed that cumulatively increase the potential for the release of contaminants within the area.

The treatment facility routinely monitors for constituents in your drinking water according to Federal and State laws. This report shows the results of our monitoring for the period of January 1, 2003 to December 31, 2003.

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 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).

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 EPA's Safe Drinking Water Hotline (800-426-4791).

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and in cases, radioactive materials, 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, agricultural livestock operations, and wildlife.

Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban runoff, and residential uses.

Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can, also come from gas stations, urban runoff and septic systems.

Radioactive contaminants, which can be naturally occurring or can be the result of oil or gas production and mining activities.

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. FDA regulations establish limits for contaminants in bottled water that shall provide the same protection for public health.

In this table you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:

- **Non-Detects (ND)** - laboratory analysis indicates that the constituent is not present.
- **Parts per million (ppm) or Milligrams per liter (mg/l)** - one part per million corresponds to one minute in two years or a single penny in \$10,000.
- **Parts per billion (ppb) or Micrograms per liter** - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.
- **Pico curies per liter (pCi/L)** - picocuries per liter are a measure of the radioactivity in water.
- **Action Level (AL)** - the concentration of a contaminant, which, if exceeded, triggers treatment or other requirements that a water system must follow.
- **Treatment Technique (TT)** - A required process intended to reduce the level of a contaminant in drinking water.
- **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.
- **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.
- **MRDLG** - Maximum residual disinfectant level goal. 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.
- **MRDL** - Maximum residual disinfectant level. The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants

MCL's are set at very stringent levels. To understand the possible health effects described for many regulated constituents, 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.

PARTICULATE TEST RESULTS					
	Allowable Levels	Highest Single Measurement	Lowest Monthly %	Violation	Likely Source
1. Turbidity (NTU)	TT: Never more than 1 NTU. Less than 0.3 NTU 95% of samples each month. (All other filters)	.21 (2/5/03 4 th sample) (6 samples daily)	100%	N	Soil runoff

Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity is a measure of treatment performance and is regulated as a treatment technique. Turbidity is measured because it is a good indicator of the effectiveness of the filtration system. Turbidity is measured in nephelometric turbidity units (NTU) and is how we measure the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

REGULATED CONTAMINANT TEST RESULTS							
Contaminant (Units)	MCL	MCLG	MAX. LEVEL FOUND	Range	Date of Sample	Violation	Likely Source of Contamination
Disinfectants & Disinfection By-Products							
1. Chlorine (as CL ₂) (ppm)	MRDL =4	MRDLG =4	1.90	1.00-1.90	6-15-03 1-27-03	NO	Water additive used to control microbes
2. TOC (Total Organic Carbon)+*	TT	N/A	1.21 (Lowest Annual Average)	1.02 – 2.05 (Monthly ratios)		NO	Naturally present in the environment
3. TTHM ** (Total trihalomethanes) (ppb)	80	N/A	51.4 Highest Annual Avg.	12-92	3 rd Quarter	NO	Byproduct of drinking water chlorination
4. HAA5 (Haloacetic Acids) (ppb)	60	N/A	42.9	13-53.8	2nd Quarter	NO	Byproduct of drinking water disinfection
+TOC is measured in ppm, but is reported as a running annual average of monthly ratios. These ratios (actual %TOC removal / required TOC removal) that make up the running annual average must be above 1.00, or reevaluation of the current TT, or implementation of a new TT will occur.							
Inorganic Contaminants							
1. Barium (ppm)	2	2	.113	N/A	3-5-03	NO	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
2. Chromium (ppb)	100	100	1	N/A	3-5-03	NO	Discharge from steel and pulp mills; erosion of natural deposits
3. Fluoride (ppm)	4	4	1.30	1.00-1.30	1-26-03 1-27-03	NO	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
4. Copper (ppm) 0 sites >AL	AL=1.3	1.3	.139 (90 th %-ile)	0-.383	8-7-01	NO	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
5. Lead (ppb) 0 sites >AL	AL=15	0	1 (90 th %-ile)	BDL-2	8-7-01	NO	Corrosion of household plumbing systems, erosion of natural deposits
6. Nitrate (as Nitrogen) (ppm)	10	10	.29	N/A	8-20-03	NO	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Radioactive Contaminants							
1. Alpha emitters (pCi/L)	15	0	1.6 ± 1.0	0-1.6±1.0	8-26-02	NO	Erosion of natural deposits
2. Combined radium (pCi/L)	5	0	1.0±.7	0-1.0±.7	11-11-02	NO	Erosion of natural deposits

* Total Organic Carbon (TOC) has no health effects. However, total organic carbon provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes (THMs) and haloacetic acids (HAAs). Drinking water containing these byproducts in excess of the MCL may lead to adverse health effects, liver or kidney problems, or nervous system effects, and may lead to an increased risk of getting cancer.

** The current MCL for total trihalomethanes (TTHM) is 80ppb. Although the TTHM level in our water is below the current MCL as a running annual average, it has been detected above the MCL at specific sites and we are including the health effects language.

Some people who drink water containing trihalomethanes in excess of the MCL over many years experience problems with their liver, kidneys, or central nervous systems, and may have increased risk of getting cancer.

The Nicholasville WTP performed bacteriological testing monthly during 2003. There were no positive tests for coliform bacteria to report.