

## 2011 Water Quality Report

### Introduction

In compliance with the federal Safe Drinking Water Act Amendments, the Elizabethtown Water Department is providing its customers with the 2011 Water Quality Report. This report explains where your water comes from, what it contains, and how it compares with standards set by regulatory agencies.

If you have any questions about this report or concerning the water utility, please contact the Chief Operator or Superintendent at the number(s) listed above.

### Where Do We Get Our Water?

Elizabethtown operates two treatment facilities, the City Springs and Freeman Lake water treatment plants. The City Springs plant obtains surface influenced groundwater from the City Spring, Dyers Spring and six (6) wells. The Freeman Lake plant obtains surface water from Freeman Lake. Finished water is purchased from Hardin County Water District #2. District #2 operates a treatment plant located in White Mills. The water source, Cave Springs, is characterized as surface influenced groundwater.

### Is A Source Water Assessment Available?

Source water assessments for the Elizabethtown water supply have been completed. Provided are summaries of the susceptibility analyses which are part of the source water assessments. Complete susceptibility analysis reports and source water assessments are available at the Lincoln Trail Area Development District and the Kentucky Division of Water.

An analysis of the overall susceptibility to contamination of the City Springs WTP water supply indicated that the susceptibility is high. There are a total of 225 potential sources of contamination within the wellhead protection area with the following susceptibility rankings: 48 high, 79 medium, and 98 low. Sources of high potential impact include: underground storage tanks, industrial sites, above ground storage tanks, auto and heavy equipment repair, Department of Transportation garage, I-65, and WK Parkway. The sources of moderate to low potential impact include: underground storage tanks, industrial sites, business commercial, business retail, business professional, and public works.

Areas of high concern for the Freeman Lake WTP water supply consist of row crops, sewer lines, tier II hazardous chemical use, urban and recreational grasses, underground storage tanks and waste generators or transporters. The possibility for a potential chemical spill, leaks from the underground storage tanks, or hazardous material accidentally spilling into the water source due to a vehicle accident or runoff from the nearby row crops creates a susceptibility ranking of high. Although there are areas of high concern, an analysis of the overall susceptibility to contamination indicates that the overall susceptibility is generally moderate.

Areas of high concern for Hardin County Water District #2 consist of bridges and culverts, a landfill, row crops and urban and recreational grasses. The possibility for a potential chemical spill, or hazardous material accidentally spilling into the water source due to a vehicle accident or runoff from the nearby row crops creates a susceptibility ranking of high. Although there are areas of high concern, an analysis of the susceptibility of the water supply to contamination indicates that the overall susceptibility is generally moderate.

### How Can I Get Involved?

The Elizabethtown City Council meets on the first and third Monday of each month in formal session and on the second and fourth Monday in work sessions. Meetings are held in City Hall at 4:30.

### Why Are There Contaminants in My 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. 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 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 before we treat it 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 stormwater 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, stormwater runoff, and residential uses.
- ▶ Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.
- ▶ Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

***Do I Need to Take Special Precautions?***

***Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA / Centers for Disease Control (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).***

**Important Information about Lead:** 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. Your local public 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. 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>.

**Water Quality Data Table**

The water quality data table lists all the contaminants that were **detected** during monitoring for the 2011 calendar year. Definitions of the terms and abbreviations used in the table are given below:

**Definitions**

- ▶ **Detected Contaminant:** A contaminant detected at or above its minimum detection limit.
- ▶ **MCL:** Maximum Contaminant Level, or 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.
- ▶ **MCLG:** Maximum Contaminant Level Goal, or 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.
- ▶ **MRDL** Maximum Residual Disinfectant Level or 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.
- ▶ **MRDLG** Maximum Residual Disinfectant Level Goal or 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.
- ▶ **TT:** Treatment Technique, or a required process intended to reduce the level of a contaminant in drinking water.
- ▶ **AL:** Action Level, or the concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system shall follow.
- ▶ **ppb:** Parts per billion or micrograms per liter.
- ▶ **ppm:** Parts per million or milligrams per liter.
- ▶ **Turbidity:** A measurement of the clarity, or clearness, of the water, expressed in Nephelometric Turbidity Units (NTUs), is typically the result of soil runoff following rainfall. Turbidity is regulated by EPA as it can interfere with the proper disinfection of the water.
- ▶ **pCi/l:** Picocuries per liter, a measure of the radioactivity in water.
- ▶ **BDL:** Below detection levels, or the concentration below which laboratory analysis can not measure.

# 2011 WATER QUALITY DATA

## CITY SPRINGS WTP (KY0470118A)

Contaminant (Units)	MCL/TT/ AL/MRDL	MCLG/ MRDLG	Level Found	Range of Detection	Sample Date	Typical Source of Contaminant
Turbidity (NTU) <sup>1</sup>	1 (TT) 95% <= 0.3	n/a	0.321 97%		2011	Soil runoff
Fluoride (ppm)	4	4	1.02	0.8-1.2	2011	Water additive which promotes strong teeth; erosion of natural deposits
Nitrate (ppm)	10	10	1.2	1.2-1.2	2011	Fertilizer runoff, septic tank leaching, sewage, erosion of natural deposits
Total Organic Carbon (ppm) <sup>3</sup>	>1.0 (TT)	n/a	1.27 (lowest quarterly avg.)	1.0-4.18	2011	Naturally present in environment
Trihalomethanes (ppb)	80	n/a	35 (highest annual avg.)	4-89	2011	By product of drinking water chlorination
Haloacetic Acids (ppb)	60	n/a	38 (highest annual avg.)	4-81	2011	By product of drinking water disinfection

## FREEMAN LAKE WTP (KY0470118B)

Contaminant (Units)	MCL/TT/ AL/MRDL	MCLG/ MRDLG	Level Found	Range of Detection	Sample Date	Typical Source of Contaminant
Turbidity (NTU) <sup>1</sup>	1 (TT) 95% <= 0.3	n/a	0.084 100%		2011	Soil runoff
Total Organic Carbon (ppm) <sup>3</sup>	>1.0 (TT)	n/a	1.57 (lowest quarterly avg.)	1.09-2.33	2011	Naturally present in environment
Nitrate (ppm)	10	10	0.55	0.55-0.55	2011	Fertilizer runoff, septic tank leaching, sewage, erosion of natural deposits
Gross Alpha (pCi/l)	15	0	0.2	0.2-0.2	2010	Erosion of natural deposits
Combined Radium (pCi/l)	5	0	0.1	0.1-0.1	2010	Erosion of natural deposits
Uranium (pCi/l)	30	0	0.2	0.2-0.2	2010	Erosion of natural deposits
Fluoride (ppm)	4	4	1.03	0.84-1.3	2011	Water additive which promotes strong teeth; erosion of natural deposits
Trihalomethanes (ppb)	80	n/a	57 (highest annual average)	16-122	2011	By product of drinking water chlorination
Haloacetic Acids (ppb)	60	n/a	48 (highest annual average)	18-73	2011	By product of drinking water disinfection
2,4-D(ppb)	70	70	0.145	0-0.29	2011	Runoff from herbicide used on row crops

## CITY WIDE SYSTEM

Contaminant (Units)	MCL/TT/ AL/MRDL	MCLG/ MRDLG	Level Found	Range of Detection	Sample Date	Typical Source of Contaminant
Lead (ppb) <sup>2</sup>	AL=15	0	BDL	BDL-54.0 1 site was found above the AL.	2009	Corrosion of household plumbing
Copper (ppm) <sup>2</sup>	AL=1.3	1.3	0.18	0.01-0.77 0 sites were found above the AL.	2009	Corrosion of household plumbing
Chlorine (ppm)	4 (MRDL)	4	1.57 (highest annual avg.)	0.29-2.2	2011	Water additive used to control microbes
Total Coliform Bacteria (# or % positive)	1	0	1		2011	Naturally present in the environment

**HARDIN COUNTY WATER DISTRICT #2 (KY0470175)**

<u>Contaminant (Units)</u>	<u>MCL/TT/AL/MRDL</u>	<u>MCLG/MRDLG</u>	<u>Level Found</u>	<u>Range of Detection</u>	<u>Sample Date</u>	<u>Typical Source of Contaminant</u>
Total Organic Carbon (ppm) <sup>3</sup>	>1.0 (TT)	n/a	2.13	1.44-4.48 (lowest quarterly avg.)	2011	Naturally present in the environment
Turbidity (NTU) <sup>1</sup>	$\frac{1 (TT)}{95\% \leq 0.3}$	n/a	$\frac{0.066}{100\%}$		2011	Soil runoff
Fluoride (ppm)	4	4	1.00	0.91-1.07	2011	Water additive which promotes strong teeth
Nitrate (ppm)	10	10	2.540	2.54-2.54	2011	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits
Trihalomethanes (ppb)	80	n/a	43	19-56 (highest annual avg.)	2011	By product of drinking water disinfection
Haloacetic Acids (ppb)	60	n/a	38	17-58 (highest annual avg.)	2011	By product of drinking water disinfection
Chlorine (ppm)	4 (MRDL)	4	1.55	0.43-2.5 (highest annual avg.)	2011	Water additive used to control microbes
Lead (ppb) <sup>2</sup>	AL=15	0	12.1	1.2-47.7 (1 site above AL)	2009	Corrosion of household plumbing
Copper (ppm) <sup>2</sup>	AL=1.3	1.3	0.131	0.002-0.332 (0 sites above AL)	2009	Corrosion of household plumbing
Barium (ppm)	2	2	0.035	0.035-0.035	2011	Drilling wastes; metal refineries; erosion of natural Deposits
Alpha emitters (pCi/L)	15	0	2	2-2	2009	Erosion of natural deposits
Combined radium (pCi/L)	5	0	0.7	0.7-0.7	2009	Erosion of natural deposits
Uranium	30	0	0.11	0.11-0.11	2009	Erosion of natural deposits

<sup>1</sup>Turbidity compliance is determined by monthly percentile of all 4-hour filtered readings at or below 0.3 NTU and a single reading not exceeding 1 NTU.

<sup>2</sup>Lead and Copper Compliance is based on meeting an Action Level in 90% of samples collected from "worst case" sites. Values shown are

<sup>3</sup>Total Organic Carbon is measured as ppm, but reported as a ratio. The ratio is the % TOC removal achieved to the % TOC removal required. Annual average of the monthly ratios must be 1.00 or greater for compliance.