

What Are Sources of Contamination to Drinking Water

The sources of drinking water, both tap water and bottled water include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include: (A) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife; (B) Inorganic contaminant, such as salts and metals, which can be naturally-occurring or result 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 storm water runoff, and residential uses; (D) Organic chemical contaminants, including synthetic and volatile organic chemicals, which are the 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, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791

DEFINITIONS OF SOME TERMS CONTAINED WITHIN THIS REPORT

MCL (Maximum Contaminant Level) -- The highest level of contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.

MCLG (Maximum Contaminant Level Goal) -- The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's 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.

MRDL (Maximum Residual Disinfectant Level) -- The highest residual disinfectant level allowed.

ppm (Parts Per Million) or mg/l (Milligrams per liter) -- Units of measure for concentration of a contaminant. A part per million corresponds to one second in a little over 11.5 days.

ppb (Parts Per Billion) or ug/l (Micrograms per liter) -- Units of measure for concentration of a contaminant. A part per billion corresponds to one second in 31.7 years.

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

The "<" Symbol -- A symbol which means less than. A result of <5 means that the lowest level that could be detected was 5 and the contaminant in that sample was not detected.

pCi/L -- picocuries per liter is a measurement for radioactivity.

BDL -- below detection level

The City of Wapakoneta has been providing water since 1895

Listed below is information on those contaminants that were found in the CITY OF WAPAKONETA Drinking Water

| <u>Inorganic Contaminants</u> | Unit | MCLG | MCL | Avg Level Detected | Range Detected | Violation Yes/No | Year Sampled | Potential Source of Contamination |
|--|-------------|-------------|------------|---------------------------|-----------------------|-------------------------|---------------------|--|
| Lead | ppb | 0 | AL=15 | 2.65 | <2 - 10 | No | 2018 | Corroision of household plumbing systems |
| 0 out 30 samples were found to have lead in excess of the lead AL of 15 ppb | | | | | | | | |
| Copper | ppm | 1.3 | AL=1.3 | 0.139 | <.01 - .53 | No | 2018 | Corrosion of household plumbing systems |
| 0 out 30 samples were found to have copper in excess of the lead AL of 1.3 ppm | | | | | | | | |
| Nitrate | ppm | 10 | 10 | 0.115 | NA | No | 2018 | Leaching from septic tanks, sewage |
| Arsenic | ppb | 10 | 10 | 3.05 | NA | No | 2017 | Erosion of rocks & minerals |
| Fluoride | ppm | 4 | 4 | 1.18 | 1.04-1.29 | No | 2018 | Erosion of natural deposits |
| Barium | ppm | 2 | 2 | 0.007 | NA | No | 2017 | Exist in nature only in ores |

| <u>Volatile Organic Contaminants</u> | Unit | MCLG | MCL | Avg Level Detected | Range Detected | Violation Yes/No | Year Sampled | Potential Source of Contamination |
|---|-------------|-------------|------------|---------------------------|-----------------------|-------------------------|---------------------|--|
| TTHM (Total Trihalomethanes) | ppb | 0 | 80 | 44.2 | 19.1 ~ 79.7 | No | 2018 | By-Product of Chlorination |
| Chloroform | ppb | NA | NA | 21.8 | 6.79 ~ 42.5 | No | 2018 | By-Product of Chlorination |
| Bromoform | ppb | 0 | NA | 0.91 | 0.57 ~ 1.35 | No | 2018 | By-Product of Chlorination |
| Dibromochloromethane | ppb | 60 | NA | 7.82 | 4.70 ~ 12.8 | No | 2018 | By-Product of Chlorination |
| Bromodichloromethane | ppb | 0 | NA | 13.7 | 6.84 ~ 25.2 | No | 2018 | By-Product of Chlorination |
| HAA5 (Haloacetic Acids) | ppb | 0 | 60 | 10.8 | 2.01 ~ 16.6 | No | 2018 | By-Product of Chlorination |
| Trichloroacetic Acid | ppb | 300 | NA | 4.74 | 2.01 ~ 11.8 | No | 2018 | By-Product of Chlorination |
| Monochloroacetic Acid | ppb | NA | NA | 5.64 | 5.64 ~ 5.64 | No | 2018 | By-Product of Chlorination |
| Monobromoacetic Acid | ppb | NA | NA | BDL | BDL | No | 2018 | By-Product of Chlorination |
| Bromochloroacetic Acid | ppb | NA | NA | 3.12 | 2.18 ~ 4.57 | No | 2018 | By-Product of Chlorination |
| Dibromoacetic Acid | ppb | NA | NA | 1.42 | 1.08 ~ 2.28 | No | 2018 | By-Product of Chlorination |
| Dichloroacetic Acid | ppb | 0 | NA | 4.77 | 3.43 ~ 7.41 | No | 2018 | By-Product of Chlorination |

| <u>Radioactive Contaminants</u> | Unit | MCLG | MCL | Avg Level Detected | Result | Violation Yes/No | Year Sampled | Potential Source of Contamination |
|--|-------------|-------------|------------|---------------------------|---------------|-------------------------|---------------------|--|
| Gross Alpha | pCi/L | 0 | 15 | NA | 0.63 | No | 2017 | Erosion of natural deposits |
| Radium 228 | pCi/L | 0 | 5 | NA | 0.84 | No | 2017 | Erosion of natural deposits |

| <u>Residual Disinfection</u> | Unit | MRDLG | MRDL | Avg Level Detected | Range Detected | Violation Yes/No | Year Sampled | Potential Source of Contamination |
|-------------------------------------|-------------|--------------|-------------|---------------------------|-----------------------|-------------------------|---------------------|--|
| Total Chlorine | ppm | 4 | 4 | 1.12 | .894 ~ 1.32 | No | 2018 | Water additive used to control microbes |

| <u>Optional Section</u> | Unit | Average for year | Range Detected | No. of Samples | Year Sampled | Source |
|--------------------------------|-------------|-------------------------|-----------------------|-----------------------|---------------------|--|
| Sodium | ppm | 212 | 89.7 ~ 253 | 52 | 2018 | Ion-Exchange Softening |
| Hardness | ppm | 138 | 116 ~ 456 | 365 | 2018 | Dissolved Naturally Occurring Minerals |