

**ALUMINUM** (Guidance Level = <0.2 mg/L)  
Aluminum occurs naturally in water and is also used in water-treatment processes to flocculate suspended particles. No standard has been set; but at high levels it has been suggested that it may cause skeletal and neurological problems.

**ARSENIC** (MCL = 0.01 mg/L)  
Arsenic in water can result from both natural processes and industrial activities, including smelting operations, use of arsenical pesticides and industrial waste disposal. Exposure above MCL may cause skin damage, cancer, or problems with circulatory system.

**CALCIUM**  
Calcium is the major source of "hardness" in water where it can be a nuisance. It builds up on the interior of pipes, water heater coils, boilers and plumbing fixtures, but it also makes the water taste good and it is good for you. At low levels, it is helpful in water supplies as it tends to form a coating on pipes and helps prevent corrosion.

**CHLORIDE**  
During the past 20 years there has been a general rise in chloride levels in wells resulting from salt being used for road de-icing. High levels contribute to the corrosiveness of water on pipes and heating equipment. It's usually accompanied by high sodium levels, which can be a health concern to some individuals.

**COLIFORM BACTERIA / e-Coli**  
Coliform bacteria are present in soils and e-Coli in human and animal feces. The presence of these bacteria may indicate surface water intrusion contamination or contamination from a septic system. EPA considers them to be the indicator organisms for "safe" drinking water.

**COPPER** (MCL = 1.3 mg/L)  
Water can be a significant source of copper intake depending upon the geographical location, the character of the water, the temperature of the water and the presence of copper pipes. Copper has toxic effects at high dose levels and may cause kidney or liver damage; but it is an essential element at lower levels.

**FLUORIDE** (MCL = 4.0 mg/L)  
Fluoride at an optimum level of 1 mg/L has been shown to be effective in reducing dental caries. At levels over 2.4 mg/L it may cause mottling of teeth and bone disease.

**HARDNESS**  
Hardness is a measure of how much calcium and magnesium carbonate is dissolved in the water. Hard water is generally good tasting and good for you; however it can produce scaling on plumbing fixtures and give poor sudsing characteristics. FTL measures hardness in mg/l. Low=0-7.5; moderate=76-150; hard=151-250; very hard=251 and up. 1 mg/l = 0.058 grains/gallon.

**IRON** (Guidance level = 0.3 mg/L)  
When iron comes in contact with oxygen, it changes to a reddish compound that can discolor bathroom fixtures and laundry. It can also impart a metallic taste to the water.

**LEAD** (MCL = 0.015 mg/L)  
Lead enters drinking water primarily as a result of the corrosion of materials containing lead that are in the water distribution system and household plumbing such as lead-based solder, brass, and chrome plated brass faucets and, in some cases, pipes made of lead that connect your house to water service lines. High levels may cause delays in physical and mental development in children. In adults it may contribute to kidney problems and high blood pressure.

**MAGNESIUM**  
Along with calcium, a contributor to the hardness of water. See comments on Calcium. Both calcium and magnesium enter the water when it is in contact with limestone. Water softeners remove "hardness" by replacing the calcium and magnesium with sodium.

**MANGANESE** (MCL = 0.05 mg/L)  
Manganese is similar to iron, but it produces a brown/black discoloration rather than the rust red of iron. A high level produces a very unpleasant odor and taste in water and may produce black deposits. Chlorine bleach should not be used in laundry washed in high iron or manganese water because it causes stains to set in clothing.

**MERCURY** (MCL = 0.002 mg/L)  
Almost all mercury detected to date in drinking water is in the form of inorganic mercury. Inorganic mercury is poorly absorbed through the gastrointestinal tract, does not penetrate cell membranes rapidly and is less toxic than methyl mercury. However, inorganic mercury may cause liver damage.

**NITRATE** (MCL=10 mg/L)  
**NITRITE** (MCL=1.0 mg/L)  
Major sources of nitrates or nitrites in drinking water include fertilizer, sewage and feedlots. Infants who drink water containing nitrates in excess of MCL may develop shortness of breath and blue baby syndrome.

**pH** (Recommended range 6.5 to 8.0)  
pH is a measure of how acid or alkaline the water is. Low numbers (around 5) indicate acid water and are usually associated with corrosion problems, pin hole plumbing leaks and can contribute to high lead and copper levels.

**PHOSPHATE**  
Orthophosphates are applied to agricultural land or residential cultivated land as fertilizers and are carried into surface waters as runoff which may then penetrate into wells or aquifers. Can indicate a possible con-tamination of the water by agricultural practices.

**POTASSIUM**  
Potassium is an essential element in both plant and human nutrition, and occurs in groundwaters as a result of mineral dissolution, from decomposing plant material, and from agricultural runoff.

**SELENIUM** (MCL = 0.05 mg/L)  
Selenium occurs naturally in some rocks and soils but can also indicate contamination from mines and refineries. Selenium is an essential nutrient at low levels but at high dose levels it is toxic.

**SODIUM**  
A guidance level of 20 mg/L in drinking water is suggested by the EPA for the high risk population of hypertensives and heart patients. Food accounts for approximately 90% of the daily intake of sodium, whereas drinking water contributes up to the remaining 10%.

**SULFATE** (Guidance Level = 250 mg/L)  
Sulfate is found in almost all natural waters. At high levels it may indicate septic or agricultural leaching into the water supply. Can be a precursor to hydrogen sulfide or "rotten egg" odor and taste in the drinking water.

**TRIHALOMETHANES**  
THM compounds have been found in most chlorinated water supplies in the US; typically they are produced in the treatment process as a result of chlorination. Toxicological studies suggest that chloroform is a potential human carcinogen. Exposure above MCL may cause liver, kidney or central nervous system problems.

**TURBIDITY**  
Turbidity refers to the degree of cloudiness in water due to suspended particles. If turbidity increases after a rain, it can indicate that surface water intrusion is occurring in the well. High turbidity levels are often associated with disease-causing micro-organisms such as viruses, parasites and some bacteria.

**Volatile Organic Compounds (VOC's)**  
VOC's include 62 different organic compounds. None of them occur naturally in water. They can indicate gasoline contamination if Benzene, Ethylbenzene, Toluene, Xylenes or MTBE are observed, or they can detect other organic compounds and solvents such as methylene chloride, trichloroethylene (TCE), tetrahydroethylene (PERC/PCE), or carbon tetrachloride.

**ZINC** (Guidance Level = <3 mg/L)  
Zinc most commonly enters the domestic water supply from deterioration of galvanized iron and dezincification of brass. In such cases lead and cadmium also may be present because they are impurities of the zinc used in galvanizing. Zinc in water also may result from industrial waste pollution.

MCL = Maximum contaminant level in drinking water as recommended by the EPA