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## DESCRIPTIONS AND RECOMMENDED LIMITS FOR TYPICAL DRINKING WATER CONTAMINANTS

*The explanation of water quality results presented below has been excerpted from a New Hampshire Department of Environmental Services Pamphlet entitled "Your Water Analysis."*

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### **TOTAL COLIFORM BACTERIA..... The presence of total coliform bacteria is unacceptable**

Total coliform are a group of bacteria with common characteristics used to indicate unacceptable water quality. Within the total coliform group, the E. coli bacteria are specifically used to identify fecal contamination. High coliform counts are usually an indication of surface water intrusion. When non-coliform bacteria counts are in excess of 200 colonies/100 ml of sample, they can obscure the growth of coliform bacteria.

If total coliform bacteria or high non-coliform bacteria counts are present in a well, it needs to be checked for contamination problems. If wells have unacceptable counts, it is often necessary to disinfect the well with bleach or chlorine tablets. This may have to be done more than once.

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### **pH.....Recommended range is between 6.5 and 8.5**

pH is a measure of the acidity of a sample. The scale is from 0 - 14; 0 - 6 is acidic, 8 - 14 is basic (alkaline) and 7 is neutral. Acidic water, along with low hardness, tends to be corrosive to your pipes, dissolving lead, copper and other minerals into your water. Alkalinity is a measure of your water's buffering capacity against large pH changes.

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### **TURBIDITY.....Recommended limit is 5.0 Turbidity Units**

Turbidity is a measure of suspended matter in your water. This can consist of fine sediment, rust particles or organic material. High turbidity levels can be an indication of various emerging water quality problems such as infiltration of surface water or pipe corrosion.

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### **COLOR.....Recommended limit is 10 Color Units**

An elevated level of color is a general indication of unacceptable water quality resulting commonly from the presence of oxidized iron and manganese. Elevated levels of other less common elements or minerals can also result in colored water.

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### **HARDNESS.....Measured on a range from 1 (soft) to 10 (hard)**

Hardness results from the presence of calcium and magnesium. The presence of these elements in general is not a health hazard, but hardness elements tend to plate out on water pipes and heating coils in hot water tanks, and to reduce the effectiveness of detergents.

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### **IRON.....Recommended limit is 0.3 mg/l**

At concentrations over 0.3 mg/l iron tends to become a nuisance element. It will show its presence as rust stains on water fixtures. Occasionally, when chlorine bleach is used in the laundry, rust spots will appear on clothes. If this happens, use a non-chlorine bleach with your clothes. Common iron removal methods include deionization, oxidation and filtration.

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**MANGANESE.....Recommended limit is 0.05mg/l**

At concentrations over 0.05 mg/l manganese becomes a nuisance chemical and shows its presence by purplish staining of kitchen and bathroom fixtures. A rotten egg odor is often associated with high iron and manganese levels and tends to disappear when the iron and manganese are removed. Manganese is considered an essential nutrient for humans at levels of approximately 5 mg/day.

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**SODIUM.....Recommended limit is 250 mg/l**

Some sodium is found in all natural water supplies, but more so in areas where seawater and road salt seep into the ground. Sodium has no set hazard level, but those individuals on a low sodium diet should take into account the amount of sodium in their drinking water when determining sodium intake.

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**CHLORIDE.....Recommended limit is 250 mg/l**

Though chloride is not considered a health hazard, the standard has been set because of the level at which the average person notices a salty taste. Chloride is associated with the infiltration of road salt, fertilizer, backwash from a water softener and seawater.

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**NITRATE/NITRITE.....Recommended limit is 10 mg/l**

The presence of nitrate/nitrite usually indicates contamination from a pasture, manure pile, decomposed vegetation or other fertilized agricultural land. Nitrates are converted to nitrites in the body, which reduces oxygen uptake by hemoglobin in the blood.

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**LEAD.....Recommended limit is 15 ug/l**

Chronic ingestion of lead has been associated with a large number of harmful health effects and therefore water with elevated lead levels should not be consumed. Most of the high levels have been associated with old lead piping and even lead solder used on copper piping. In most cases running the water before filling a glass to drink can reduce lead in your drinking water.

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**COPPER.....Recommended limit is 1.0 mg/l**

High copper concentrations are almost always the result of corrosive water picking up copper from plumbing lines. The acceptable limit was set at 1.0 mg/l because above this level water may have an unpleasant taste and cause blue or green staining on fixtures.

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**ARSENIC.....Recommended limit is 0.01 mg/l**

The EPA has set the health standard for arsenic at 0.01mg/l. Some of the health effects related to arsenic exposure are skin irritation, skin cancer, liver and kidney damage and damage to the central nervous system. Arsenic's origin in water is not definite, but one source is some of the bedrock in the state, and other sources are manmade such as some metal refining processes.

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**FLUORIDE.....Recommended limit is 4.0 mg/l**

Fluoride has been widely used to prevent tooth decay, but in excess it can cause spotted or even pitted teeth called fluorosis. Recommended adult intake is 1.0 - 2.5 mg/day. Children are often given a supplement if their home drinking water is not sufficient.

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