

WATER QUALITY TERMS

pH - pH is a measure of how acidic/basic water is. The range goes from 0 - 14, with 7 being neutral. A pH of less than 7 indicates acidity, whereas a pH of greater than 7 indicates a base. The pH of water determines the solubility (amount that can be dissolved in the water) and availability of important nutrients such as phosphorus, nitrogen, and carbon.

HARDNESS - A property of water which causes an increase in the amount of soap that is needed to produce foam or lather and that also produces scale in hot water pipes, heaters, boilers and other units in which the temperature of water is increased materially. Hardness is produced almost completely by the presence of calcium and magnesium salts in solution.

ALKALINITY – The capability of water to neutralize acid. This is really an expression of buffering capacity. A buffer is a solution to which an acid can be added without changing the pH significantly.

IRON - Iron is a common metallic element found naturally in the earth's crust. Water moving through soil and rock can dissolve minerals containing iron. Occasionally, iron pipes also may be a source of iron in water. Iron is a non-hazardous element, but can be a nuisance in a water supply by staining laundry, plates, and fixtures.

SALT – There are many different kinds of salts that form naturally through ionic bonding (a type of chemical bond). Measuring the amount of salts in a water sample is a helpful indicator of water quality.

BACTERIA – Are types of microscopic unicellular organisms. Some bacteria cause disease, while others perform an essential roles such as decomposing organic matter, stabilizing organic wastes in wastewater treatment plants, and removing pollutants. Disease-causing forms of bacteria are termed pathogenic. Some forms of pathogenic bacteria include:

Total Coliform Bacteria—A particular group of bacteria that are used as indicators of possible sewage pollution.

TURBIDITY - Turbidity is the measure of the relative clarity of water. It is an optical characteristic of water, and is an expression of the amount of light that is scattered by material in the water. The higher the intensity of scattered light, the higher the turbidity. Material that causes water to be turbid include clay, silt, finely divided inorganic and organic matter, algae, soluble colored organic compounds, and plankton and other microscopic organisms.

COLOR - A bit of color in water can seem unappealing. So, color in our water matters because we want our water to be appealing! Even pure water is not colorless, but has a slight blue tint to it. The blueness in water comes from the water molecules absorbing the red end of the spectrum of visible light. Color in drinking water can be caused by dissolved and suspended materials, and a brown shade in water often comes from rust in the water pipes. The water you drink likely contains a number of dissolved minerals that are beneficial for human health. And, if you have ever drunk "pure" water, such as distilled or deionized water, you may have noticed that it tasted "flat". Most people prefer water with dissolved minerals, although they still want it to be "colorless".

CHLORINE - Chlorine readily combines with chemicals dissolved in water, microorganisms, small animals, plant material, tastes, odors, and colors. These components "use up" the chlorine, providing disinfection, making your water clean and safe to drink. Whatever amount of chlorine leftover after

disinfection is called the “residual”. We analyze water samples for chlorine residuals as a measure of water quality.

CHLORAMINE - Chloramines are a group of chemical compounds used in drinking water disinfection. Chloramines are mixed into water in levels that kill germs but are still safe to drink.

FLUORIDE - Fluoride does not affect the appearance, taste or smell of drinking water. Our water contains fluoride at a level that is effective for preventing cavities; this can occur naturally or by adding fluoride.