SIGNIFICANCE OF WATER SUPPLY ANALYSIS

This report explains some of the testing that was done on the water sample from your water well or tap water. The tests will generally give you a good understanding of the quality of your drinking water. If there are other particular problems which you feel may affect your water such as lead and copper or organic contaminants, you may arrange for further testing by calling the State Environmental Laboratory at (405) 702-1000. There are additional charges for these tests.

HARDNESS

The total hardness of a water will affect the amount of soap needed to produce a suds or lather. Waters with a total hardness less than 75 mg/l* are considered to be soft, those between 75 and 150 mg/l are moderately hard, those between 150 and 300 mg/1- are hard, and those greater than 300 ml/l are very hard. Hard waters are satisfactory for drinking as-soft waters. Excessive hardness may, however, cause laundering difficulties or produce scale in hot water tanks and cooking utensils. Hardness is generally derived from contact of the water with natural accumulations of salts in soil and geological formations, principally limestone, dolomite and gypsum.

The components of total hardness may be classified in two ways: (1) with respect to the metallic cations (positively charged particles) which are the cause of the greatest portion of hardness in natural waters. The most common cations are calcium (calcium hardness) and magnesium (magnesium hardness); and (2) with respect to the anions associated with the metallic cations, carbonate (temporary) hardness and non-carbonate (permanent) hardness. The major cause of hardness problems in Oklahoma is carbonate hardness.

TOTAL DISSOLVED SOLIDS

The recommended upper limit for total dissolved solids is 500 mg/l. Waters over that limit should not be used if better quality water is available. Palatability of the water may be affected. Chloride, sulfate, and alkalinity are primarily responsible for the dissolved solids content of the water.

CHLORIDE

The recommended upper limit for chloride is 250 mg/l. Chloride is the greater part of table salt and may impart a salty taste to water.

SULFATE

The recommended maximum for sulfate is 250 hg/l. Excessive concentrations of sulfate may act as a laxative to unaccustomed consumers. A bitter or gyp taste is often associated with high sulfate concentrations.

*mg/l = milligrams per liter. A liter is slightly more than a quart.

CONTINUED ON NEXT PAGE

WATER

SIGNIFICANCE OF WATER SUPPLY ANALYSIS

NITRITE/NITRATE

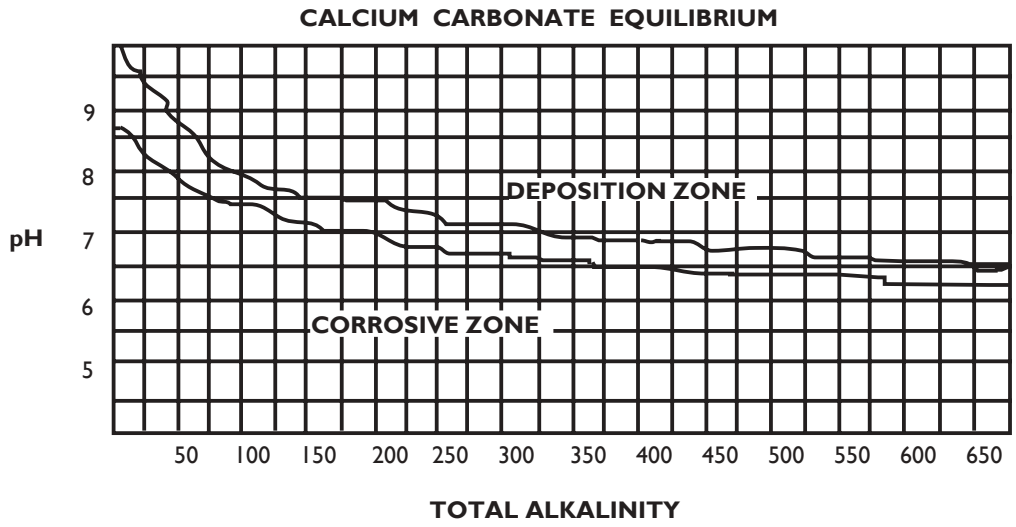
The maximum allowable level for nitrite/nitrates in a domestic well, a public water supply or other primary source of drinking water is 10 mg/l. Nitrite/nitrates are of particular interest to pregnant women and infants under six months old since it may cause methemoglobinemia (blue baby). Nitrite/nitrates are of no concern for adults or children. Sources of nitrite/nitrates include soil, sewage, and fertilizers.

TOTAL ALKALINITY

Total alkalinity is a measure of the buffering capacity of water or its ability to resist sudden changes in pH.

pH

The optimum range for pH in drinking water is 6.5 to 8.5 standard units depending on the alkalinity and other factors.



The table above may be used to compare the pH of the water to its total alkalinity and determine if the water is either corrosive or depositive. If there is sufficient alkalinity in water and the pH is high enough, then calcium carbonate or lime will precipitate out of the water and form a protective coating on the lines of a water distribution system. This coating is desirable up to a point, as it will help protect metallic water lines from corrosion. However, excess deposition of calcium carbonate can eventually clog a water line.

Water with a pH and alkalinity that fall in the corrosive zone in the table above are likely to cause corrosion of metal lines. This corrosion allows iron to dissolve into the water and may cause "red water" and red staining of fixtures. These stains may cause the water to be less aesthetically palatable but are not usually a danger to health.

This publication is issued by the Oklahoma Department of Environmental Quality authorized by Steven A. Thompson, Executive Director. Copies have been prepared at a cost of $0.0035 each. Copies have been deposited with the publications clearinghouse of the Oklahoma Department of Libraries.(watersupply.pmd) 8/02