Methods Protocol

Metals

Aluminum – Manganese
Iron – Silicon
Appendix VI

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Background Information on Metals to be Tested

Iron:

Iron, found abundantly in the earth’s crust, is carried to streams and water bodies by rain that has seeped through the soil and continues on to the water. Iron is considered a secondary or aesthetic contaminant. The recommended limit is .3mg/L based on water taste and appearance rather than health. Past .3mg/L contaminated water has a red or brownish color and may stain laundry, sinks, dishes, and household fixtures.

Aluminum:

Aluminum is also an abundant element, and may be introduced to water ways naturally or as effluent from water treatment plants that use forms of aluminum in a process called coagulation to purify drinking water. High levels of aluminum introduced into water may become toxic to aquatic life by decreasing the pH of the water. In humans there are possible links to diseases such as Alzheimer’s, Parkinson’s, and Lou Gehrig's disease with consumption of large amounts of aluminum. The concentration limits for aluminum in drinking water is not to exceed .05 ppm.

Silica:

In typical fresh water supplies silica concentration levels lay between 1 and 30 mg/L. Silica provides an important food source for diatoms and act as a notable link in the biological food chain. Negative effects of increased levels of silica include harsh effects on heat intensified as well as other types of equipment commonly in contact with water.

Manganese:

Manganese is rarely found in concentrations above 1.0 mg/L in typical stream locations. However, when found in increased amounts, manganese will cause unpleasant tasting water, deposits on food during cooking, stains on silver ware, discoloration on clothing, and it also fosters the growth of micro-organisms in water supplies.

References: