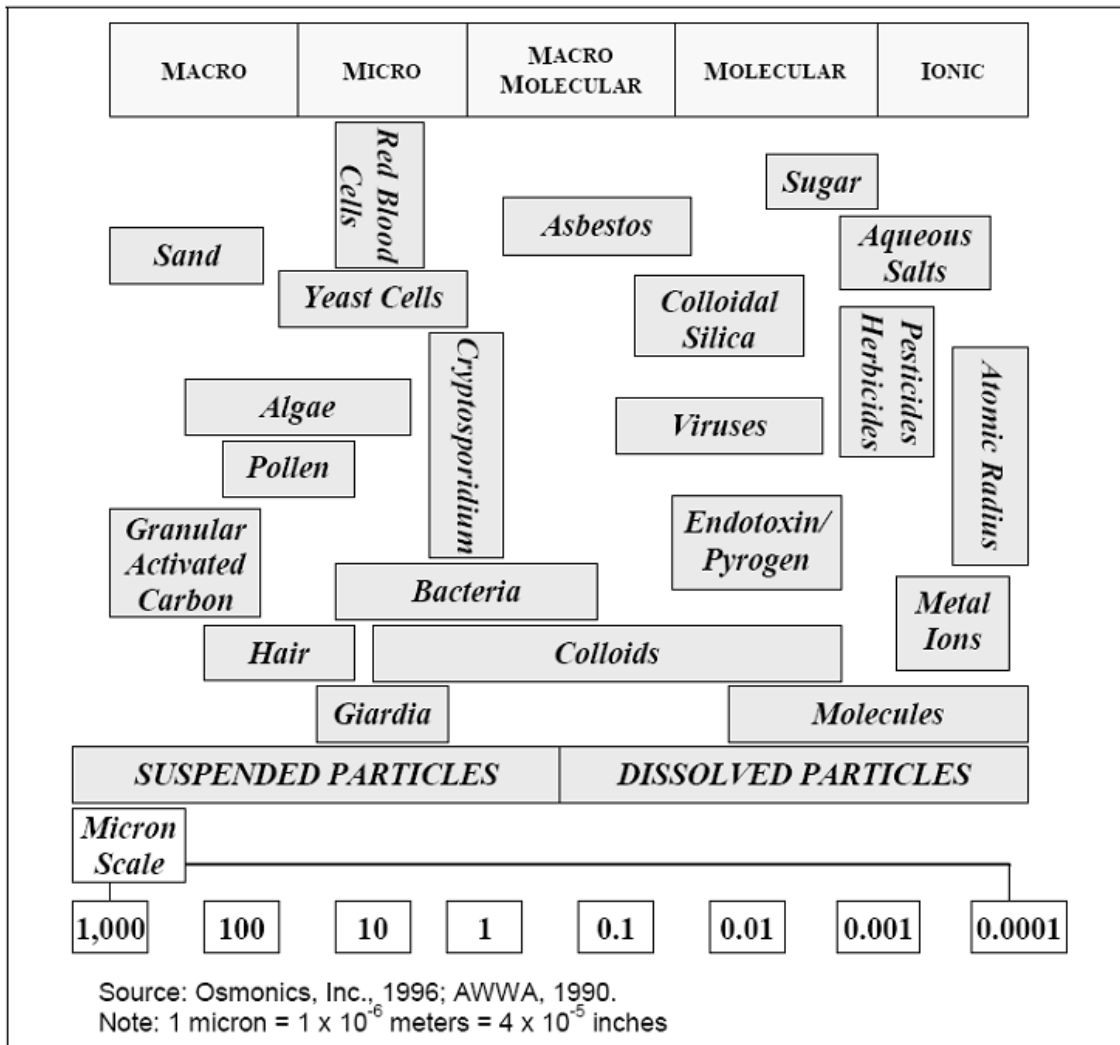


TURBIDITY- WHY IS IT IMPORTANT?

Turbidity is the measure of how clear a liquid is and how much light is scattered by the sample (AWWA, 1990). It is measured in nephelometric turbidity units (NTU). Turbidity should not be confused with suspended solids, which expresses the weight of suspended material in the sample. There is no direct relationship between suspended solids and turbidity and exact comparisons between the two are difficult to make. Factors that contribute to turbidity in surface water are soil particles, organic matter, and pathogens (bacteria, viruses, and protozoa). The figure below provides a detailed overview of particle types and sizes found in surface water.



Particle Size Spectrum

Turbidity in the water creates both aesthetic and health issues. Surface water treatment plants remove particles because they can cause objectionable appearances, tastes, and odors and can interfere with disinfection. Also, some pathogens, such as *Cryptosporidium*, which have been linked to waterborne diseases, are resistant to certain disinfectants. The most effective treatment for *Cryptosporidium* is filtration to ensure its removal. The LT1ESWTR requires filtered systems to achieve a 2-log removal of *Cryptosporidium* to reduce the possibility of waterborne diseases.