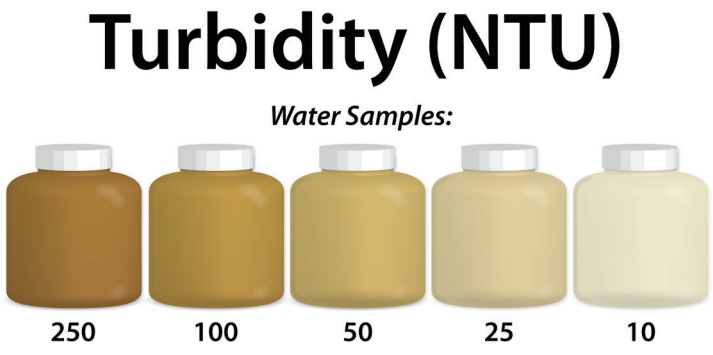
Turbidity

What is it?
Turbidity often is used as a proxy for water clarity. Technically what turbidity measures is the intensity of light scattered by particles in the water sample at 90° incident to a light source. Particles such as clay, silt, sand, algae, plankton, microorganisms, and other matter suspended in the water scatter the passage of light through water. To the naked eye, turbidity appears as cloudy or muddy water. However, it differs from color in that water can have a dark color but low turbidity (e.g., tannin-rich waters that flow through peaty areas).

Turbidity is reported in units called Nephelometric Turbidity Units or NTUs. The Hydrolab sensor's range is 0-3,000, but likely your measurements will be on the lower end.



Source: Learn NC

Why do we measure it?
Turbidity is important to measure because at certain levels (typically higher) it can impact a waterbody. For instance, high turbidity reduces the amount of light passing through water from the surface. Reduced light, in turn, can reduce the rate of photosynthesis and therefore lower dissolved oxygen levels.

Also, suspended particles absorb heat, so high turbidity can raise the water temperature. This, in turn, can reduce the concentration of dissolved oxygen, since warm water holds less dissolved oxygen than cold water. Suspended materials can clog fish gills too, or smother fish eggs when they settle to the bottom. These particles also can settle into the spaces between the rocks on the bottom and decrease the amount and type of habitat available for aquatic invertebrates.

What affects it?
Suspended materials can enter the water by natural or human-caused means such as by soil erosion of a river bank or urban/agricultural runoff from surrounding land. Turbidity often increases sharply during and after a rainfall since the energy of falling and flowing water is the primary way that sediment gets dislodged and carried into rivers.

Particulates also could be introduced into a waterway directly from a pipe, such as for storm or wastewater discharge. In addition, biological activity can increase turbidity such as from excessive algal growth or from bottom feeders such as carp stirring up bottom sediments.