



Turbidity Measurement in Water Purification

Industry: Water/Wastewater, Life Sciences, Food and Beverage
Product: TB750

Introduction

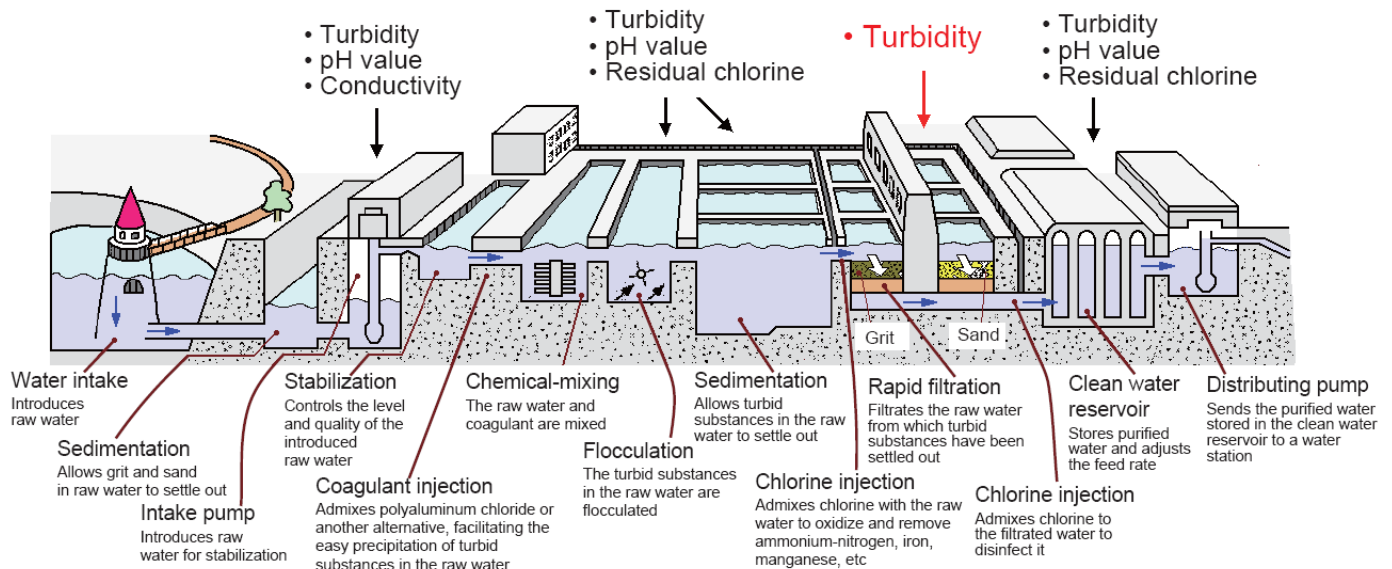
Turbidity is a measure of the degree to which the water loses its transparency due to the presence of suspended particulates. The more total suspended solids in the water, the murkier it seems and the higher the turbidity. Turbidity is considered as a good measure of the quality of water. There are various parameters influencing the cloudiness of the water. Some of these are: phytoplankton, sediments from erosion, re-suspended sediments from the bottom (frequently stir up by bottom feeders like carp), waste discharge, algae growth, urban runoff. The WHO (World Health Organization), establishes that the turbidity of drinking water shouldn't be more than 5 NTU, and should ideally be below 1 NTU.

Furthermore, it has been decided that officially prescribed methods, including automated metrology, are to be used as methods for testing these water quality standard items. This decision has been made to meet the demand for increasingly stringent water quality control against newly emerging problems such as cryptosporidium and byproducts produced as a result of chlorine treatment, as well as for rationalizing and facilitating water quality control.

The TB750G right angle scattered light turbidity meter is used to control water quality using the complementary parameters' standard value of 1 mg/l, and to control the turbidity of filtrated water at a level less than 0.1 mg/l as an anti-cryptosporidium measure. The TB750G turbidity meter measures low turbidity levels and is designed to prevent measurement errors caused by air bubbles.

Application

It is essential to eliminate the turbidity of water in order to effectively disinfect it for drinking purposes. This adds some extra cost to the treatment of surface water supplies. The suspended particles also help the attachment of heavy metals and many other toxic organic compounds and pesticides. The portable tap water distributed to individual households is originally produced from raw water taken from rivers or underground springs. At water purification plants, chemicals are injected into the raw water to produce flocs that serve to absorb hazardous substances in the raw water and allow them to be deposited and filtered out. Chlorine is then added as a disinfectant to the treated water.



A variety of water quality measuring instruments, including turbidity meters, residual chlorine analyzers, and pH meters, are used in water purification plants. This application note focuses on turbidity meters, which are used to verify that filtration systems are operating in excellent condition. Turbidity is measured in NTU: Nephelometric Turbidity Units. The instrument used for measuring it is called nephelometer or turbidity meter, which measures the intensity of light scattered at 90 degrees as a beam of light passes through a water sample. The TB750G turbidity meter continuously measures post-filtration turbidity in order to achieve the required turbidity control value of 0.1 mg/l.

- * Measures low turbidity levels both continuously and accurately
- * Reduces operating cost
- * Eliminates the need for manual cleaning
- * Keeps the initial cost of equipment replacement to a minimum

Product Recommendations

Right angle scattered light turbidimeter

Model: TB750G-NTU-

ST-N□-NNNN-1-NN/D1

Main components: Turbidity detector, converter, pressurized head tank

Primary product specifications:

Measuring range: 0-0.2 NTU to 0-100 NTU
 Output signal: 4-20 mA DC
 Installation location: indoors

Zero-turbidity filters (to be purchased separately)
 Filter assembly 1 micron: P/N K9411UA
 Filter assembly 0.2 micron: P/N K9726EF

Notes:

This turbidity meter uses a pressurized head tank to eliminate air bubbles, which are a major error factor in the measurement of low turbidity levels. For more information contact your local Yokogawa Analytical Marketing Department.

