Polyelectrolyte is added to settle out the solids and the discharge water from the centrifuge is measured using a 4670/401 dip turbidity system to ensure the process is operating correctly.

The illustration above shows the process where sludge removed from the raw water is transferred to a centrifuge in the sludge dewatering plant.
Why monitor the sludge dewatering plant for turbidity?

► To measure the effectiveness of the polyelectrolyte process and sludge dewatering plant.
► To ensure the plant operates at maximum efficiency.
► To provide early warning of plant failure.

Why use ABB Instrumentation?

► System is immune to ambient light – can be used in open channels.
► We offer the most reliable, cost-effective method of monitoring plant operation and efficiency.
► Provides accurate measurement below 5ppm (mg/l) – essential on discharge monitoring, but maintains performance up to 1000FTU to accurately follow changes in process conditions.
► Simple robust sensing system – minimal maintenance and easy calibration.
► Dry calibration standard has many advantages, e.g.:
  • Obviates the use of formazine – is safer, ensures repeatable accurate results and eliminates operator error.
  • Choice of dry standards – enables calibration to be carried out near or close to expected operating range and maximises accuracy.
  • Very robust – designed to avoid physical damage for long life performance.
  • Dry calibration standard storage container – to protect the standard when not in use for long life performance.
► Virtual life time zero, very stable electronics using LED technology – avoids risk of electronic drift.
► Auto cleaning on all systems except low level monitor – extends maintenance periods and optimizes performance on dirty water applications.
► LED technology – reduces risk of algae buildup as no heat is generated.
► Suspended solids capability – unit can be calibrated in mg/l or ppm in addition to NTU/FTU – essential on sewage discharge.
► Robust no fuss emitter and receiver – no special positioning required, can easily be removed and replaced for maintenance purposes. Double sealed with silica gel driers to avoid internal condensation.
► High immunity to temperature fluctuations – unique design minimises error due to temperature change.
► IP66/NEMA 4X Wall mounted transmitter – to work in demanding environments.
► IP66/NEMA 4X Front cover on panel mount version – no additional protection necessary.
► Back lit LCD display – easy to read in all environments.
► Choice of 0 to 10, 0 to 20 and 4 to 20mA isolated current O/P.
► Serial interface option available.
► Non-volatile memory – no battery back-up required.

Dry Calibration Standard for 4670/400

3 operating ranges available:
Model 7997/160, value typically 60 – 80 FTU
Model 7997/161, value typically 450 – 550 FTU
Model 7997/162, value typically 700 – 800 FTU
What ABB products are suitable?

- Model 4670/401 dip system:
  - where an open channel or tank is available,
  - offer dry standards 7997/160, 161 or 162 according to the operating range required.

Other ABB monitoring capabilities suitable for use in other parts of the potable water treatment plant

- pH monitoring of incoming raw water.
- Turbidity monitoring – low level.
- Flow monitoring.

Installation

- Ensure there is sufficient cable to allow access to the sensor for maintenance/calibration.
- Where a flow system is used, ensure that flow is regulated on the outlet of the flow system to avoid air bubbles, or use a de-bubbler.
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