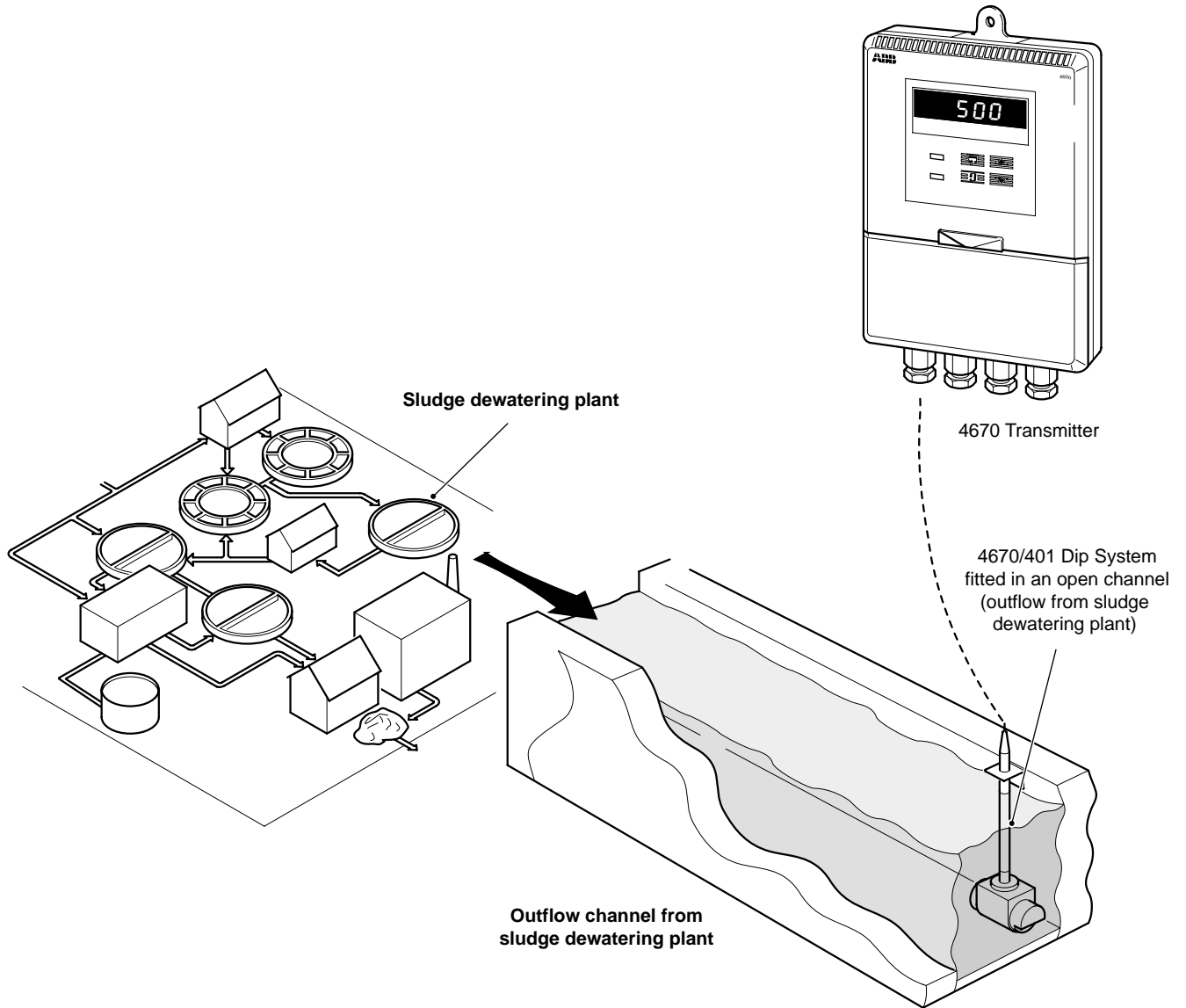


Turbidity Monitoring of Sludge Dewatering on a Potable Water Treatment Works



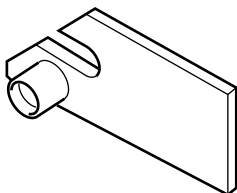
The illustration above shows the process where sludge removed from the raw water is transferred to a centrifuge in the sludge dewatering plant.

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.

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?



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

- ▶ 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.

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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