

**CONSIDERATION REGARDING THE INFLUENCE OF WORK
CONDITIONS IN THE PRE-SETTLING STEP OF SURFACE WATER
WITH HIGH CONTENT OF SUSPENDED MATTER**

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Abstract

High turbidities (1000 ÷ 4000 NTU) in surface water used in drinking water treatment plants, specific in extreme meteo conditions (floods, freshets), must be diminished before the inlet of raw water in the station.

Selection of suitable work conditions (chemical reagents type, doses, pH, contact/settling time) is very important in order to assure a good operating of the treatment plant. The presence of high suspended matters influences the concentration values of turbidity and oxidability (COD-Mn) which are higher than those corresponding in case of normal meteo conditions (turbidity = 1000 ÷ 4000 NTU, COD-Mn = 38 ÷ 114 mg O₂/L).

In order to correct the aboved mentioned parameters (residual turbidity ≤ 100 NTU, COD-Mn = ≤ 8 mg O₂/L), the following experiments were done:

- coagulation using Al₂(SO₄)₃ ± milk of lime ± anionic flocculant;
- gravitational settling at different separation times.

An important parameter is pH (optimal domain pH = 6.6 - 6.9) which influences the level of soluble aluminium in pre-treated water (Al³⁺ = 8 - 50 µg/L).

Keywords: *high turbidity, pre-settling, surface water*