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## **Book of Abstracts**

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## NATURAL ORGANIC MATTER (NOM) – PRECURSOR OF UNDESIRABLE COMPOUNDS IN DRINKING WATER

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Chlorine is a common disinfection agent used in the natural water supplies treatment in order to ensure the microbiological safety of drinking water. At the same time, chlorine is used as oxidant agent for removal of oxidable pollutants from groundwater, especially for ammonium ions. The high doses of chlorine imposed by ammonium break point chlorination process ( $\text{Cl}_2:\text{NH}_4^+ = 8 \div 15:1$ ) generate also chlorinated by-products such as trihalomethans (THMs) and haloacetic acids (HAAs) with potential carcinogenic effects. The brominated species were suspected to be much stronger carcinogens and mutagens than their chloride – containing analogues. The reaction between chlorine and natural organic matter (NOM), which contain substantial amount of humic substances (HS) and also the THMs concentration level, are affected by several factors as: pH, temperature, dissolved organic carbon (DOC), bromide concentrations, chlorine dose, contact time. The present paper has as main objective the evaluation of halogenation effect on THMs formation and upon evolution of some indicators of NOM quality / reactivity ( $A_{254}$ , SUVA) for three groundwater sources with different pollution degrees ( $\text{DOC} = 2 \div 4,5 \text{ mgC/l}$ ,  $\text{NH}_4^+ = 1,6 \div 10 \text{ mg/l}$ ,  $\text{Br}^- = 0,1 - 1,1 \text{ mg/l}$ ).