

Szczygłowska, R., Chyc, M., Burzala, B., Kolwzan, B. Assessing Bacteriological and Physicochemical Quality of Swimming Pool Water in an Indoor Recreational Object. *Ochrona Srodowiska* 2012, Vol. 34, No. 4, pp. 51–56.

Abstract: Water quality in indoor recreational objects (swimming pool, SPA, aquapark) is of paramount importance to the health of the users. Inadequate disinfection of swimming pool water may be the underlying cause of various diseases or afflictions. In the recreational object chosen for the study reported on here, water quality assessments were carried out using routine and extended microbiological and physicochemical analyses. It has been demonstrated that routine microbiological analysis failed to reliably assess the sanitary condition of the swimming pool water. In terms of routine microbiological indicators, water quality was satisfactory at all sampling sites but two. The two exceptions were in the SPA tubs and wading pools, where mesophilic bacteria alone were found to occur in excessive numbers (115 to 1000 cfu/cm³). Only with extended microbiological analysis was it possible to detect the occurrence of bacteria of the *Pseudomonas* genus, including *Pseudomonas aeruginosa*. The water samples examined in this mode also displayed lower redox potential values (507 to 582 mV) and a lower free chlorine content (0 to 0.1 gCl₂/m³). The periodical occurrence of *Pseudomonas* bacteria should, *inter alia*, be attributed to the stagnation of water in some parts of the installation, where their growth rate was found to exceed 100 cfu/cm³, and where the presence of coagulase-positive staphylococci was detected. *Pseudomonas* bacteria were also present in the water samples collected from spray irrigators and rain showers. The results obtained make it clear that if the disinfection process is conducted without sufficient efficacy, the microorganisms growing in the swimming pool develop the potential for colonizing the installations, and thus pose health hazards to the swimmer.

Keywords: Swimming pool, water quality, disinfection, *Pseudomonas aeruginosa*, turbidity, redox potential.