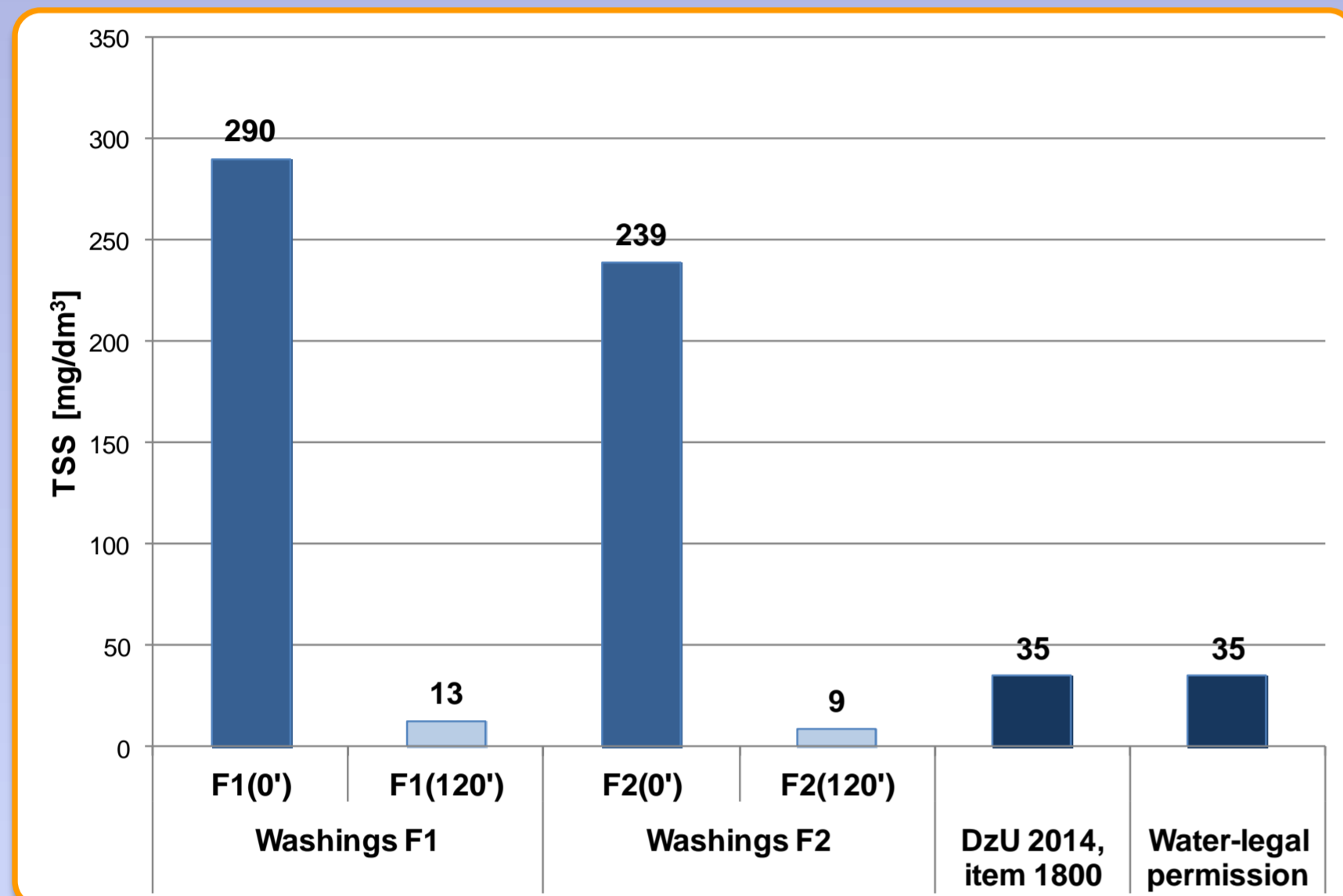




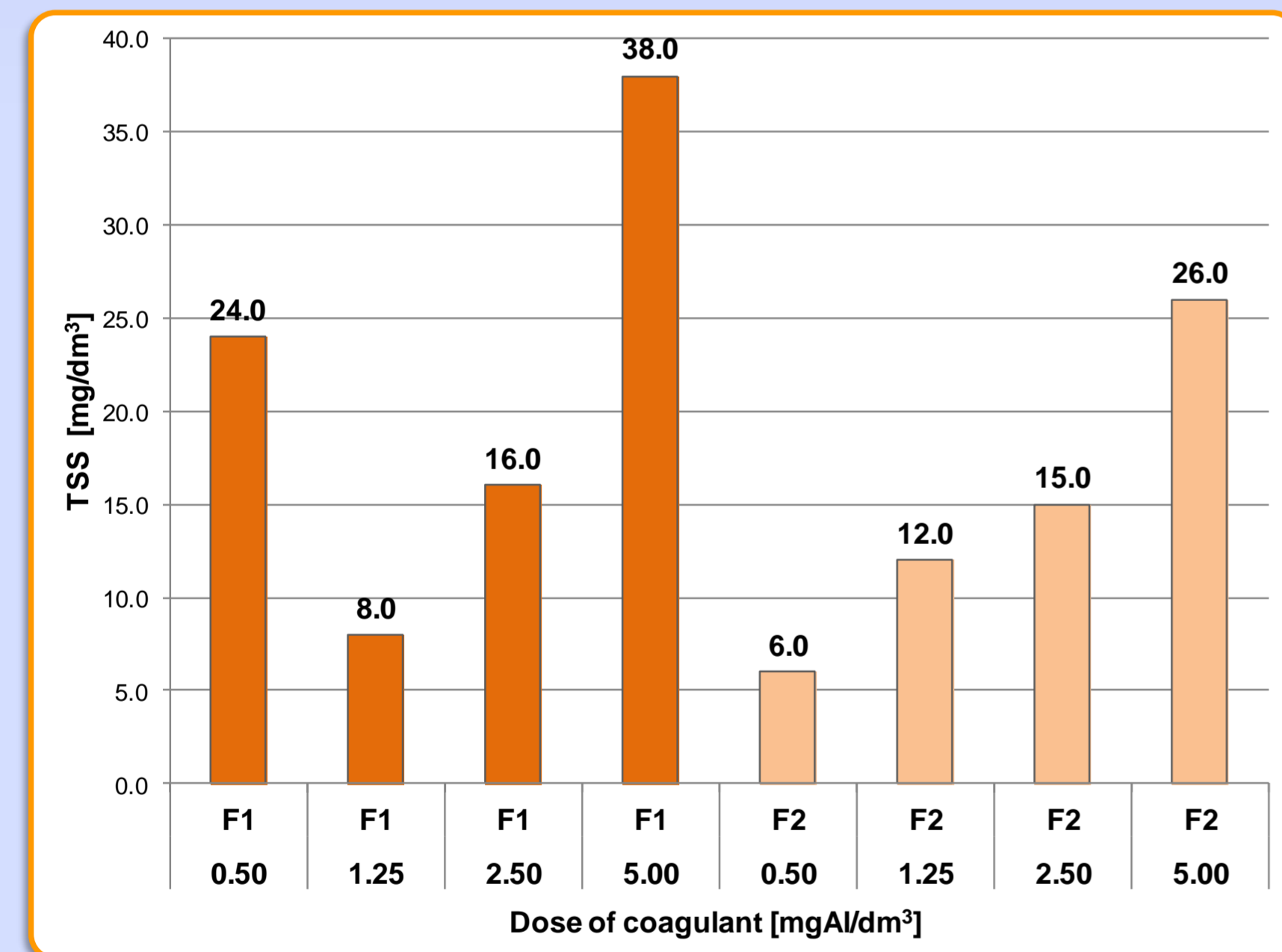
# ANALYSIS OF THE POSSIBILITY OF WASHINGS DISCHARGE FROM THE SWIMMING POOL TO THE RIVER

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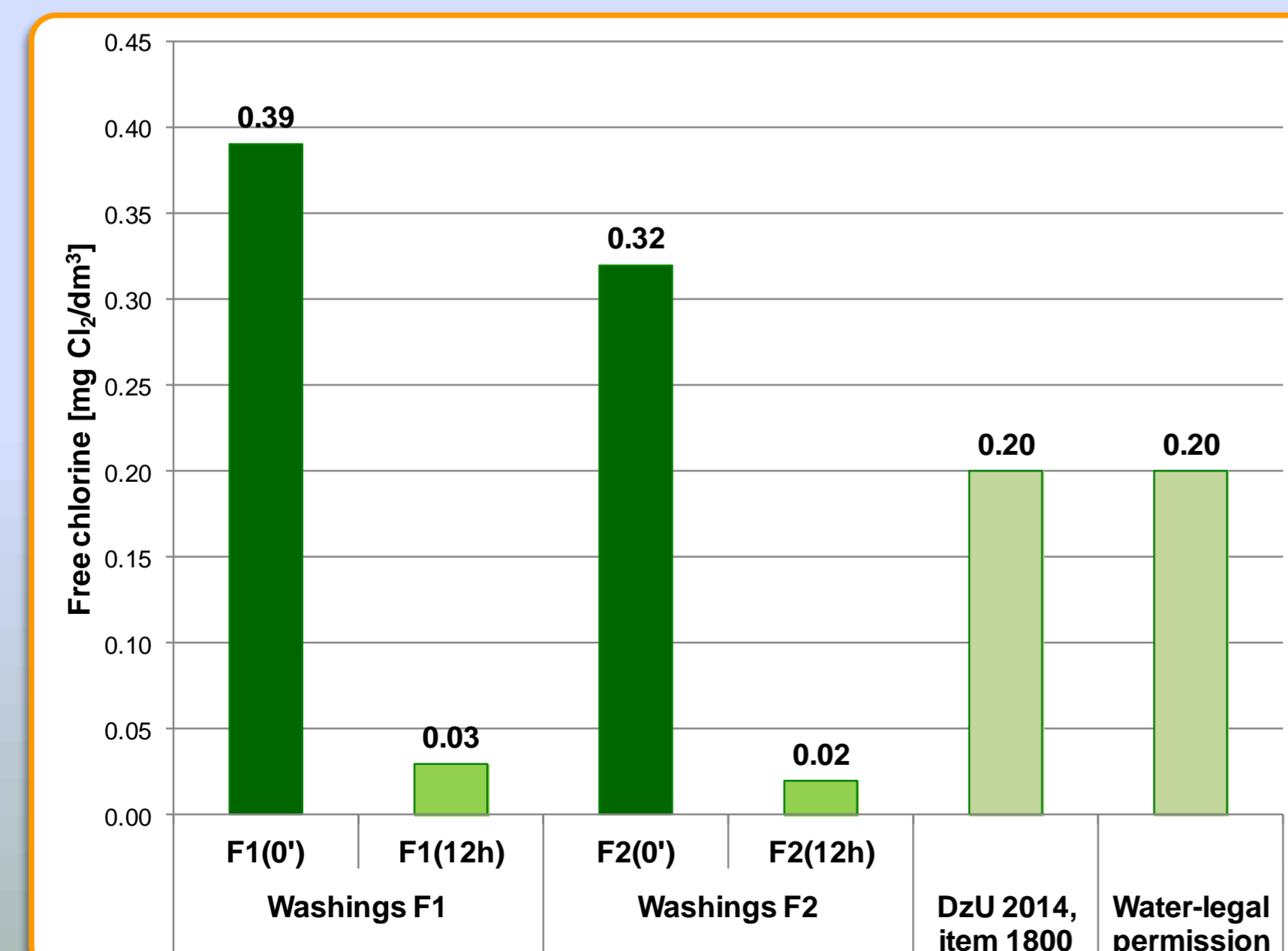
Based on the physical and chemical analysis of washings samples, the degree of their contamination was determined. The results were compared with the recommended acceptable level of pollutants in wastewater discharged to water or soil (DzU – Journal of Laws – 2014, item 1800) and with the requirements of the water permit issued for the analyzed swimming pool. The obtained results for raw washings (F1 and F2) showed that a direct discharge of washings into a river is impossible, especially due to the high concentration of free chlorine and the amount of total suspended solids (TSS). The analysis of the results of washings subjected to the process of sedimentation or coagulation in the laboratory helped to design the system for discharging supernatant water into a river. Such management would require the use of a buffer tank, settling tank or a system supporting the sedimentation of suspended solids, e.g. by means of coagulation and then the drainage of concentrated sewage into the sanitary sewage system.



The amount of TSS in washings and supernatant water after a two-hour process of washings sedimentation



The amount of TSS in the supernatant after coagulation, with different doses of the coagulant

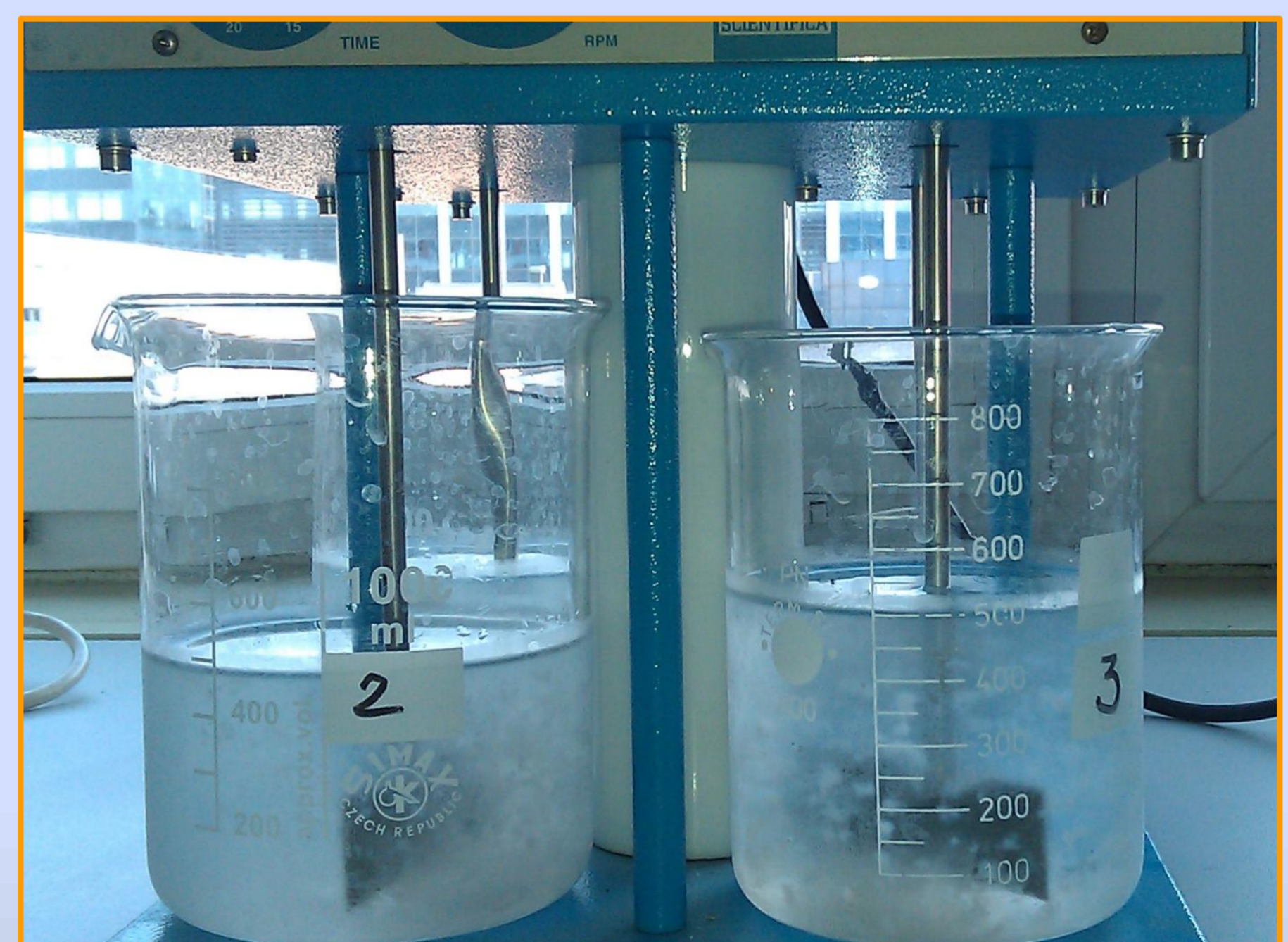


The content of free chlorine in washings F1 and F2 during the sampling and after 12h

The laboratory analysis of sedimentation of suspensions of washings showed that their ability to fall is very high. A 95% to 96% reduction in suspensions by sedimentation in Imhoff funnel was obtained.



The analysis demonstrated the possibility of using the coagulant (used in the pool water treatment process) to reduce the amount of suspension in the washings. Depending on the dose of coagulant, it was possible to obtain the following amount of suspension in the supernatant: 6 mg/dm<sup>3</sup> ÷ 38 mg/dm<sup>3</sup>.



The concentration of free chlorine in washings has been significantly reduced over time. After approx. 12 hours, the content of free chlorine in washings was: 0.02 mgCl<sub>2</sub>/dm<sup>3</sup> ÷ 0.03 mgCl<sub>2</sub>/dm<sup>3</sup>.