Sewage more dangerous than thought

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Recent studies indicate that the appropriate method to determine the degree of water pollution with organic substances may falsify the results, so the actual amount of pollutants flowing into water treatment plant may be much higher, reports the Journal of Environmental Monitoring.

Knowledge of both chemical composition and concentration of the substance, which can be found in the wastewater is crucial not only for the relevant departments involved in the creation of legal regulations related to environmental protection but also for engineers construct the equipment used in sewage treatment plants. Research conducted by scientists working with Professor R. Halden from Arizona State University (USA) have discovered a rather uninteresting truth of the analytical methods used in determining the degree of contamination of water brought to the sewage treatment plant. Since the analytical equipment used in the analysis of waste water are very sensitive, it is necessary to the proper preparation of the sample of dirty water. One step is the removal of solid particles in waste water, whose presence would prevent the proper execution of many complex studies. As is clear from studies conducted by prof. Halden, along with filter-solid particles is removed up to 50 percent of organic pollutants water! In many cases, the reports made after analysis of water is not taken into account measurement error resulting from the removal of vast quantities of water during preparation for analysis (laboratory) water samples. Researchers conducted a simulation of conditions that prevail during the analysis of urban waste water - tested a suspension of 33 organic compounds. In all cases, the actual quantity of the substance contained in the model wastewater, different from that obtained during the detailed analytical studies. These differences ranged from 16 to 60 percent by weight of the test chemical. In the higher pH of the solution, observed greater differences in the results obtained. According to the author's research, it is necessary to verify whether the methodology used in the analysis of water (to include the final results of the chemical substances that are adsorbed on the surface particulates) and the relevant regulations.