

Possible Recycling of Spent Filter Backwash – Marina Valentukeviciene

Summary

Spent-filter backwash water is usually discharged into sewers or returned to the head of a water treatment plant (WTP) to be re-processed. The purpose of this study was to characterize and compare two different WTP filter backwash water contents that were obtained by using conventional and air scour backwash methods, and influence the recycling of spent-filter backwash water. For this purpose, the spent-filter backwash water was analyzed at two different Lithuanian WTPs i.e. one using a conventional backwash method and another using an air scour backwash method. The impact of recycling spent-filter backwash on the treated water's quality was evaluated by comparing the concentration of the total iron content with suspended solids in the filtered water by following legislation rules. Backwash water in this research contained a significant concentration of total iron and a large amount of suspended solids. In this study it was found that, conventional sedimentation by gravity was sufficient for the removal of suspended solids and iron from the backwash water. Further, the presence of analyzed chemical compounds accumulating into the backwash water after sedimentation had no significant impact on the filtration's effectiveness. Therefore, this research shows that air-scour backwash water can be recycled in the same way as conventional backwash water, but a different sedimentation rate needs to be evaluated.