

付着汚過装置による高度処理実証実験について

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概 要

生活排水等の二次処理水を簡易な方法で、さらに高度処理を行なうためにひも状接触材を用いた付着汚過実験装置を製作し、各種の実証実験を行なった。実験の結果得られた成果は以下のようにまとめられる。

①流入水のSSおよびBODの濃度範囲がそれぞれ16~55mg/l, 10~33mg/lの場合, 1時間程度の滞留時間の処理でSSおよびBODの除去率はそれぞれ80~90%, 70~93%と高く, 処理水のSSおよびBODはいずれも10mg/l以下であった。②定期的に逆洗を行ない, 装置内の汚泥を排出することにより, 繰り返し実験を続けてもSSおよびBODの除去率の低下はなく, 処理機能は安定していた。③SSおよびBODの除去率は流入変動(ピーク係数; 1.0~2.0) による影響は少なく, 流入水量とは負の相関関係を示し, 流入濃度とは正の相関関係が認められた。④装置内のSS蓄積量は流入SS量と正の相関関係を示し, 汚泥の流出するまでの時間は, 流入水量や流入するSS量とは明確な相関関係が認められず, 今回の実験条件ではおおむね100~300時間の範囲であった。

Advanced Treatment Using an Experimental Stick-filtration Plant

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Abstract

As performing advanced treatment for purifying biologically treatment water by simple method, an experimental stick-filtration plant using contact lace media has been devised. The experimentation using this plant has been performed under many conditions. The results obtation from this experimentation are showed as follows, 1) When the SS and BOD concentration ranges for the influx water were respectively 16 to 55 mg/liter and 10 to 33 mg/liter, the removal efficiency of SS and BOD for treatment with a detention time

of approximately one hour were respectively 80 to 90% and 70 to 93%, and both SS and BOD of the effluent were less than 10mg/liter. 2) By performing periodic backwashing and discharging sludge in the plant, the treatment performance was stable and the removal efficiency of SS and BOD did not drop. 3) The removal efficiency of SS and BOD was little affected by fluctuation in inflow (peak coefficient: 1.0 to 2.0), showing negative correlations with the amount of influx and positive correlations with the concentration of the influx. 4) The amount of SS accumulation within the plant showed a positive correlation with the amount of influx SS, but no clear correlation was observed between time until discharge of SS and amount of influx or amount of SS, with time under these experimental conditions generally within the range of 100 to 300 hours.