



Dose Sewage Need to be Treated Seriously

Dawen Gao*

State Key Laboratory of Urban Water Resource and Environment, Harbin Institute of Technology, China

The traditional concept of domestic sewage treatment emphasized degradation of COD and removal of phosphorus and nitrogen from domestic sewage to meet the national discharged standards, such as GB 18918-2002 in China. In the process of domestic sewage treatment, external energy, materials and human resource must be consumed, and the secondary pollution is inevitable. For example, in the traditional nitrogen removal involves two processes, aerobic nitrification process needs aerator which driven by electrical energy; and anoxic denitrification process requires methyl alcohol addition as organic carbon source. Also in the denitrification process there is N_2O emission responsible for greenhouse effect. The electricity generation also is accompanied by air pollution and CO_2 emission.

Domestic sewage is misplaced resource, and it is now being regarded more as a resource than a waste. What can we get from sewage? The main contaminant organic matters will be biomass energy to transform to biofuel analogues such as CH_4 from anaerobic digestion, to electricity from microbial fuel cell, etc. Nitrogen and phosphorus are the major elements of fertilizer and nitrogen in sewage can be good source for fertilizer rather than removed as N_2 . Phosphorus recovery receives lots attention for its non-renewable characteristic. Struvite crystallization is an effective method for high concentrations of nitrogen and phosphorus simultaneous recovery. Reclaimed sewage can be used for irrigation to save water resource. The domestic sewage has great potential for resource recovery instead of a traditional treatment.

***Corresponding author:** Dawen Gao, Professor, State Key Laboratory of Urban Water Resource and Environment, Harbin Institute of Technology, China, Tel. 86-451-86289185, 86-13936568283; E-mail: dawengao@gmail.com

Received October 19, 2013; **Accepted** October 29, 2013; **Published** November 05, 2013

Citation: Gao D (2013) Dose Sewage Need to be Treated Seriously. Hydrol Current Res 4: e111. doi:[10.4172/2157-7587.1000e111](https://doi.org/10.4172/2157-7587.1000e111)

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