

Study of Issues in Sludge Disposal and Management in Wastewater Treatment Plants

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Improper methods of treatment, disposal and management of sludge generated by wastewater treatment plants has become a major environmental issue at present. This research focuses on identifying the environmental impact caused by the methods used when disposing and reusing the produced sludge as fertilizer, by the Biyagama CWWTP, Ratmalana/ Moratuwa WWTP, Ja-Ela/ Ekala WWTP and Raddolugama sewerage treatment plant. The sludge samples collected from the dumpsites were tested for heavy metals, nutrients, and organic compounds present in them. After analysing the constituents present in the sludge, the issues in respective treatment plants and its procedures were identified. Moreover, the possibility of using the sludge as construction material, fertilizer and whether it satisfies the requirements to use as a fertilizer for crops cultivated for human consumption were discussed. In addition, a model limitation scale for the sludge standards was introduced through this study after observing various limitations maintained in other international standards. As per the results, only sludge from Raddolugama Plant was assured as safe for land application, and sludge in Biyagama plant was found to be the most suitable for fertilization among the others although other minor hitches were found. Conclusively, eco-friendly and sustainable solutions were suggested to improve the sludge qualities and overcome the issues found and proposed how sludge could be utilized for greater uses without wasting a valuable asset.

Keywords: *sludge, wastewater treatment plant, sludge disposal, sludge management*