ABSTRACT

Evaluation of the Efficiency and Feasibility –
Wastewater Garden Technology –
Bahamas

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One of the major challenges in developing countries is the implementation of appropriate wastewater treatment systems that are sustainable, economically and do not require huge amounts of resources to maintain.

In this project report, an evaluation of the efficiency and feasibility of the wastewater garden at The Island School, in Cape Eleuthera, is examined.

Analysis of wastewater samples was undertaken along with numerical calculations for wastewater entering and exiting the wastewater garden. The feasibility of the system was examined by comparing the technology to other technologies currently used and proposed for wastewater treatment in The Bahamas.

Even though the BOD_5, nitrates, total organic carbon and suspended solids achieved removal rates of 91.4%, 66.4%, 87.5% and 71.8%, respectively only the nitrates met the required standard. The system achieved a log (3) reduction for faecal coliform. In order for the system to meet the final discharge standards, a post treatment and enhancements to the system is recommended.

This method of wastewater treatment can be a low to medium cost technology in The Bahamas, if native vegetation and local materials are utilized. Before this technology can be recommended as an alternative method for wastewater treatment to the Government of The Bahamas, further research and enhancements must be made to The Island School Wastewater Garden.

Key words: Roberta Wendy Quant; wastewater gardens; constructed wetlands; septic systems.