Anaerobic Wastewater Treatment

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As AguaClara has grown, it has become increasingly important to not only improve methods for the treatment of drinking water, but also to treat community wastewater in a sustainable manner. The long term goals of this research are to develop a a gravity driven system for wastewater treatment and to characterize the general mechanism for anaerobic waste treatment. This team will operate under the principles of reducing human impact on the environment by effectively treating domestic wastewater before reintroduction to natural bodies of water and treating waste as a source of energy rather than a sink.

Current Research

The wastewater team's current research is aimed at better understanding Upflow Anaerobic Sludge Blanket (UASB) reactors and adapting current UASB designs for more efficient waste treatment. The efficiency and effectiveness of waste treatment will be determined based upon removal of Chemical Oxygen Demand (COD), Ammonia Nitrogen, Phosphate Phosphorous, and turbidity. The effectiveness of the system will also be measured based upon biogas production and the characteristics of the biogas, as high levels of methane production will allow energy to be harvested from the treatment process. Initially, the team will construct reactors of varying designs and compare the efficiencies of these designs with current UASBs. This summer's research will largely consist of designing and constructing the reactors and reaching steady state effluent characteristics before adapting operation.

Members

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Documents

	Challenges	Tasks	Literature Review	Symposium
Spring '14				
Fall '13	? Unknown Attachment	? Unknown Attachment		? Unknown At
Summer '13		? Unknown Attachment	? Unknown Attachment	