Filtration Purification

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In developing countries there are few clean water sources and the cost to purify water is expensive. This filtration system project was designed to inexpensively filter and purify contaminated water. Filtered water was collected, turbidity tests were conducted prior to purification. Bacteria tests were conducted after filtration and then after purification by UV light in a UV chamber. The control had a turbidity average of .06 FTU. The average turbidity results Design I using native soil was 8.69 FTU and for the sand was .86 FTU. Design II using native soil had an average of .53 FTU and the sand had an average of 11.83 FTU. Design III with native soil did not have any results so no data was recorded. The sand had an average of 88.1 FTU. Design IV had two native soil samples. The first sample average was .95 FTU. The second sample had an average of .02 FTU. Bacteria tests were conducted. The first three designs showed E. coli and Salmonella as well as in the clay loam tubes in design IV. No bacteria was present in the sandy loam tubes in design IV. The hypothesis was not supported by the data. Design IV, where ¾ lime and ¼ native soil was used, was the most effective using a glass catch container. The UV light eliminated the E. coli and Salmonella in the clay loam tubes. The sandy loam tubes eliminated E. coli and Salmonella without the use of the UV light.

Awards Won: