Engineers Without Borders
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MAFI ZONGO WATER TREATMENT PROJECT UPDATE

BACKGROUND

In September 2005, the University of Arizona student chapter of Engineers Without Borders (EWB@UA) was awarded a three-year water treatment project in Ghana, West Africa. The project began when communities in the Mafi Zongo area of the North Tongu District of Ghana's Volta Region organized and began implementation of an ambitious water treatment and distribution system that would ultimately serve 30 villages and more than 10,000 villagers. However, the community owned and operated system has experienced difficulties since distribution began. Having completed an assessment of the water system during January and August 2006 site visits, the team from EWB@UA has begun the process of developing solutions and planning for the expansion of the distribution network.

CURRENT EFFORT

Based on the research conducted by EWB@UA into appropriate pretreatment technologies and their expected performance characteristics, EWB@UA feels that the Mafi Zongo Water Project requires an improved pretreatment scenario to ensure acceptable performance and reliability. The major reason that such a large-scale intervention is necessary is due to the design of the existing upflow roughing filter (URF), which is inadequate to handle the poor quality of the source water. Moreover, the existing drainage/flushing system is incapable of maintaining the existing URF in a manner that can ensure optimal performance. As a result, EWB@UA has designed an improved roughing filter that will be integrated into the existing treatment train.

DESIGN IMPLEMENTATION TRIP

The purpose of the next site visit will be to complete the construction of a new gravel roughing filter. Based on the requirements of the design, EWB@UA estimates that it will need to send six members to Ghana during Summer 2007 to complete the project.

IMPLEMENTATION TRIP COST (6 @ $3000/trip):	**$18,000**
CURRENT PROJECT BALANCE:	**$6,300**
REMAINING FUNDRAISING TARGET:	**$11,700**

The Water Treatment Plant requires a new gravel pre-treatment filter to ensure proper slow sand filter operation (left). Professional Mentor Scott Beeson (CH2M Hill) stands with village children at one of the project's 21 standpipes (right).