Demonstration Plant

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Abstract

AguaClara has a new demonstration plant developed over the Spring and Summer of 2012. This demonstration plant will be used as a portable demonstration unit for education and to advertise the AguaClara technologies.We need to fabricate several more demonstration units and thus need to refine the fabrication methods.

Skills fluids, AguaClara water treatment processes, process controller, fabrication

1 Introduction

The AguaClara demonstration plant will be an excellent educational tool and demonstration unit as well as a device that can be used in households. It will be used at Cornell for outreach activities as well as by implementation partners as they promote the AguaClara technologies to municipalities. A prototype of the demonstration plant is available. Now that the overall design and layout of the demonstration plant is completed it will be possible to reduce fabrication costs by using a more cost effective frame system.

2 General Considerations

The demo plant should be easy to operate, easy to assemble and transportable as a carry-on luggage item. The unit processes should be easy to disconnect and clean. The plumbing connections must all be leak tight to prevent spills. The water level in the plant must be controlled with an exit weir from the filter. The plant should be both professional looking and low cost so that we can afford to make multiple units.

We expect each implementation partner to benefit greatly from a demo plant. We need two demo plants at Cornell (one for campus use and one for conferences). We have partners in Honduras, Guatemala, Panama, Colombia, and Ethiopia. This suggests that we need 7 demo plants. We will need to analyze cost cutting methods for fabricating the plants, create a budget, raise funds, procure supplies, and fabricate the plants. We need to have at least one additional plant finalized by the end of the semester to take to Honduras in January.

3 Improvements for the Demonstration Plant

1. Evaluate alternatives for the frame including PVC pipe (see Paul Charles for ideas).
2. Develop a method to produce the flocculators. We no longer have the material that we used to build the flocculators.
3. Develop fabrication methods for the flocculator and other components that minimize machine shop time.