Chemical Dose Controller Detailed Task List
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Chlorinator systems for villages in India

Finish by October 1, 2013

- Design and test the components for systems using half size single lever, and make sure that the components are chlorine resistant
- Design a better system that can force water and air bubbles through the dosing tubes at start up
- Develop a method to fabricate the complete packages (outsourcing of all or some of the components)
- Prepare clear design documents for all of the system components
- Prepare a proof of concept supply of components for several dosers ready to be shipped to wherever they are needed.

Constant Head Tank improvement

Finish by October 23, 2013

- Build new horizontal axis CHT using a nalgene drinking bottle, and verify or assess the compatibility with chlorine (especially the cap) using the mini float valves from Kerick Valve and the standard float provided with the valve.
- Measure the change in water level in the CHT as a function of flow rate and verify that it is less than 0.5 cm.
- Design a simple height adjustment system for CHT (not using 80-20)

Half size doser

Finish by November 13, 2013

- Determine if the half size doser is appropriate for chlorine dosing and if so, design a single lever, half size doser system for village level chlorinators. If the half size doser is not appropriate, then design a single lever, full size doser. Design the single lever system to use the same lever as the double lever system.
- Modify the doser design to use a slightly thicker lever so that it is more rigid. This is especially important for the single lever system. The slider will need to be redesigned. It is possible that the fabricator can make this change easily.
- Design a better experimental test rig that keeps the dosing tubes straight and tight.
- Demonstrate the ability to swap components quickly and easily to adjust flow rate and to calibrate the doser.

Alternatives to PVC, drop tube calibration, and general tubing

Finish by December 6, 2013

- Explore better (lighter, easier to ship, less expensive) options than PVC pipe for the float that moves the doser lever.
- Locate tubing connectors that are chlorine resistant from constant head tank to rapid mix.
- Integrate calibration columns into the drop tube. Print transparent labels.
- Figure out the flow break points in the design that result in selection of different tubing sizes or different number of tubes.
- Determine the flow range for the mini float valve and then design for higher flow rates using a larger float valve.
- Assemble and test all the components for chemical dosers of different flow rates.
- Test units at stock concentrations used at AguaClara facilities.