

StaRS Backwash Alternative

StaRS Filter Inlet and Extraction

The StaRS Backwash Alternative Team was started in Fall 2014 to address the issue of slotted pipes being clogged during backwash of the AguaClara filters. The team is working to find an alternative for the slotted pipes that will not clog up with sand at any point of backwash or filtration, and will be easy to manufacture on site in Honduras and India given the resources available in each country.

The current slotted pipes being used in the backwash system of the AguaClara filters, which have been clogging up with sand, thus posing a problem for the backwash system since the slotted pipes's purpose is not being fulfilled. Given this issue, the Alternative Backwash without Slotted Pipes subteam will work to find an alternative pipe for the backwash system that will not clog up with sand at any point of backwash or filtration and will be easy to manufacture on site in Honduras and India given the resources available in each respective country. The team has successfully built a STaRS scale model to be used to accurately experiment with alternative pipes for both an inlet and an outlet valve. Through experimentation, it was found that the alternative tubes in the shape of a hollow rectangular prism cut in half lengthwise and placed with the interior facing down did not fill up with sand during the processes of filtration or backwash. Once the pump was turned off, however, the sand would settle underneath the outlet pipe. This led the team to two possible courses of action: the first being that the team could leave the pump running the water at a low flow rate and the second being that the team build a second alternative for the outlet pipe. Both actions would solve the issue of the sand clogging up, but the team pursued the second alternative. The new shape for the alternative was a hollow cylinder with wings that extended out tangentially from the top of the cylinder with a hole in the middle of the cylinder's bottom. In experimentation, the new alternative outlet pipe worked well for the first trial, but filled up with sand in the subsequent trials. Through more experimentation with the current alternatives, or perhaps new alternatives, future subteams will work to find a solution that will consistently work without filling up with sand.

Members

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	Challenges	Tasks	Symposium	Final Presentation	Final Report
Fall '14		? Unknown Attachment		? Unknown Attachment	? Unknown Attachment
Spring '15					? Unknown Attachment