

# ms2577

## Meena Selvanathan's Individual Contribution Page

### Spring 2012 Contributions- Demo Plant

This semester I have worked on the [Demo Plant](#), specifically working with [Miree Eun](#) and [Diana Kelterborn](#) to design and construct a Stacked Rapid Sand Filter (SRSF) to accurately reflect current AguaClara technologies. First we completed initial design calculations on MathCAD and ordered parts to begin fabrication. A big challenge we faced was replicating the slotted pipes of the full-scale SRSF on such a small scale. I have contacted and visited labs and companies on and off campus to inquire about using a Wire EDM and abrasive wires to fabricate these. After concluding that these methods were not feasible and experimenting with using wire mesh, we replicated the slotted pipes using compressed springs. Once the SRSF was completed, we made minor adjustments to ensure proper positioning on the new frame relative to other processes. Also, I have helped set up and break down the Demo Plant at the Tau Beta Pi Science and Engineering Fair and Engineering Student Project Team Showcase. After finishing the Demo Plant for the EPA P3 competition, we measured the overall plant dimensions and systematically calculated and documented the headlosses through the tubing, connectors, and valves. I also helped consolidate the MathCAD design file for the demo plant and wrote parts of the teach-in presentation, user manual, and research report drafts.