

Stacked Rapid Sand Filtration

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The stacked rapid sand filter is a novel self-backwashing filter invented by the AguaClara team. Its unique stacked geometry allows it to use the same flow rate for the filtration and backwash cycles, without the expensive pumps or elevated tanks required to backwash conventional rapid sand filters. In addition, a stacked filtration system requires a much smaller footprint than a conventional filter to treat a given flow rate.

A vertically stacked filtration system meets many of the AguaClara Project constraints. Both normal filtration and backwash operations are gravity driven and require no electricity. In addition, it is an open system. The required construction materials (PVC pipes, sand, concrete, brick, and rebar) are relatively cheap and available in Honduras. Most importantly, stacked rapid sand filtration is proven to consistently lower the effluent to below the US EPA standard of 0.3 NTU.

Current Research

Low Flow SRSF

Low Flow Stacked Rapid Sand Filters are an adaptation of rapid sand filters optimized for flows less than 3 L/s that don't require any flow control or backwash.

Floc Filtration

Further Reading

- Proof of Concept Paper
- General Filtration
- Current Challenges
- Past Challenges



Current Members

- Mihir Gupta
 - Kris LaPan
 - Rachel Proske
 - Nadia Shebaro
- Documents

Challenges	Tasks	Teach-In	Presentation
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Past Research

[Spring 2012 Full Scale](#)
[Spring 2012 Pilot Scale](#)
[Spring 2012 Bench Scale](#)
[Fall 2010](#)
[Summer 2010](#)
[Theory and Design](#)
[Spring 2010](#)