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Village Water Ozonation System

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VILLAGE WATER OZONATION SYSTEM

GRANT BRUBAKER, RUTH GALYEN, AND SAM STONE

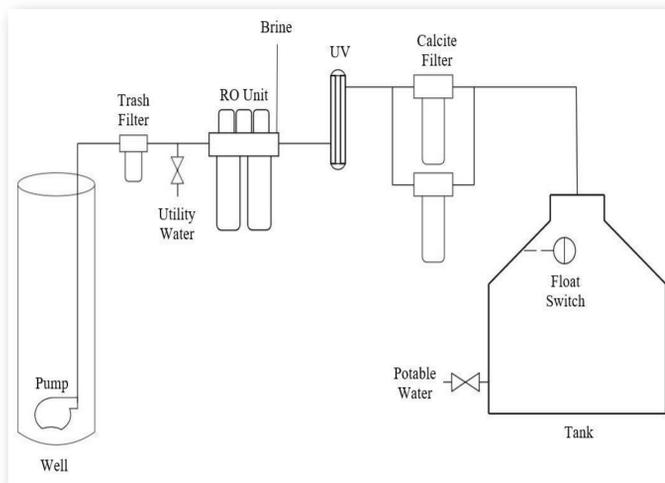
Rama Cay, Nicaragua

Mission Statement

Access to clean water is one of the biggest problems the human population faces today. Without clean water, people are more susceptible to disease and illness. The Village Water Ozonation System (VWOS) team hopes to meet this need by providing safe, reliable, and affordable drinking water.

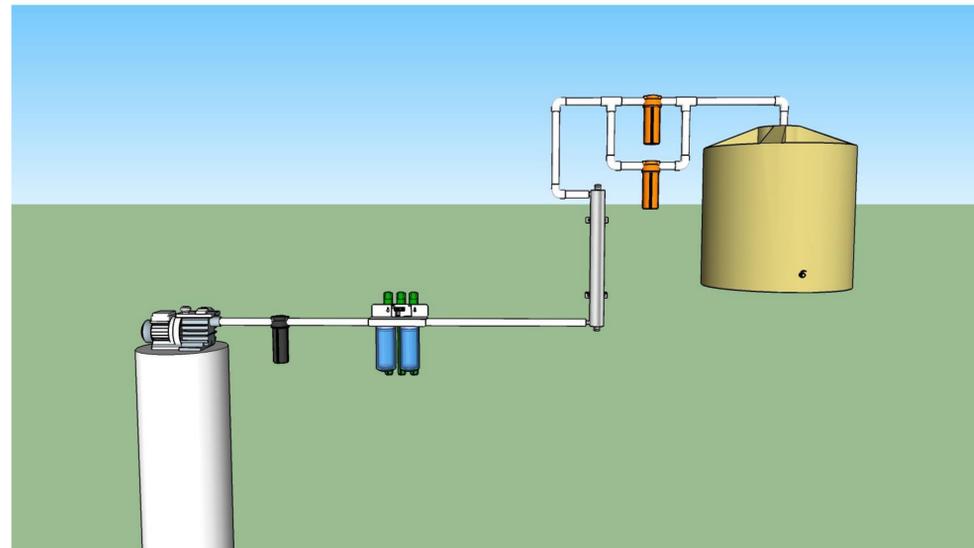
Design Characteristics

To meet the needs for the villagers of Rama Kay (Nicaragua), our system uses water treatment technologies made for water that tastes salty and acidic. The Reverse Osmosis System (RO) treats the salt in the water while the Calcite Filters correct the pH. Other factors to consider is the UV lamp, which inactivates harmful bacteria, water storage tank, and the pump which draws the water out of the wells.



2D Schematic: South Well (Rama Cay)

Progress Summary



Partner: Friends in Action

Client: Rama Cay Island

Contacts: Tim Johnston (USA)

Primary Goal: Provide affordable drinking water to an impoverished community

Problem: Well water is contaminated with E-Coli and a high salinity

Brine Disposal

The team is currently working on developing methods for safely disposing the brine in a way without long term affects. The team reviewed many options of getting rid of the water, including evaporation, taking the brine out to the ocean. However, these options proved inferior to disposing the brine into the bay. We know the community relies on the local shrimp population for sustenance, so our implementations cannot harm this ecosystem. So Far, the team has learned that shrimp do not live near rocks, so we are targeting our system to dispose of the brine there. We have also been researching methods to model how the brine will behave in the bay to ensure it does not linger to long and harm the surrounding ecosystem.

Mama Beth's Children's Program

Problem Statement: Mama Beth's is a feeding program that serves children in Kijabe, Kenya. Along with the food, the children need clean water, but the center's water has high levels of E. coli. VWOS is working to provide clean drinking water for the children.

Partner: Forward Edge International

Client: Jane Wathagana (Director of Mama Beth's)

Contact: Jeff Thompson (USA)

Design Characteristics: The team is looking into chlorine as a disinfection method, and we built a possible chlorinator design.

Moving Forward:

- Run and test chlorinator
- Gather more site details
- Design full system



Mama Beth's



Chlorinator

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Ray Knepper: Project Consultant

Maggie Mueller: Volunteer



Our Team

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