

tyw7

"Teresa Wong"'s Individual Contribution Page

"Spring 2012" Contributions

During the Spring 2012 semester, I was a member of team Ram Pump. Our goal was to design and build a ram pump test station to elevate water from lower to higher elevation. The key to this challenge was to optimize the ram pump to elevate the maximum flow of water given a set elevation difference and inlet flow.

Our greatest success was finding that the ram pump operated best with a self-fabricated custom wasting valve. By tuning the wasting valve using various weights and stroke lengths, we were able to get a general idea for how properties of the wasting valve impact pump performance. Our greatest challenge was setting up a data acquisitions system that was capable of recording the hydraulic transients of the pump. Furthermore, our test pump indicated the importance of strong structural supports to resist the water hammer created by the wasting valve and to maximize the transfer of moment to pumping water. While there is still much to learn, our research this semester has helped us better understand how ram pumps work and how they can be incorporated into the greater AguaClara plant design.