

I PRO 348

DESIGN A SYSTEM TO RECYCLE CONDENSATE FROM RESIDENTIAL AIR CONDITIONERS

by the “Drip Drops”





Statement of Problem

- Air conditioning condensate is a wasted resource. One of the reasons it is wasted is that there is no system to collect it and recycle it for non-drinking applications.

Goals



- To find practical uses for the condensate
- To design a system to recycle the condensate
- To make the product scalable

Specific Tasks

- Visit collection sites
- Test various samples of condensate
- Keep a record of everything for future IPROs.



Team Organization



Sub team	Members	Purpose
Hardware Design	Niravkumar Hazariwala Siddhartha Raghuvanshi Matt Claxton	To design a collection device to recycle condensate
Lab testing	Syeda Ahmed Nicole Specht Anam Abro	Carry out biological and chemical lab tests to analyze samples of condensate
Site Investigation	Cari Hesser Jessica Martinez Rachel Yanover	Research common types of A/C units and their specifications. Attain samples of condensate
Standards	Malisa Ismail <u>Erich Ruszczak</u>	Set standards and methodology for collecting condensate
Marketing	Malisa Ismail Erich Ruszczak Anam Abro Niravkumar Hazariwala Siddhartha Raghuvanshi	Begin initial market study activities



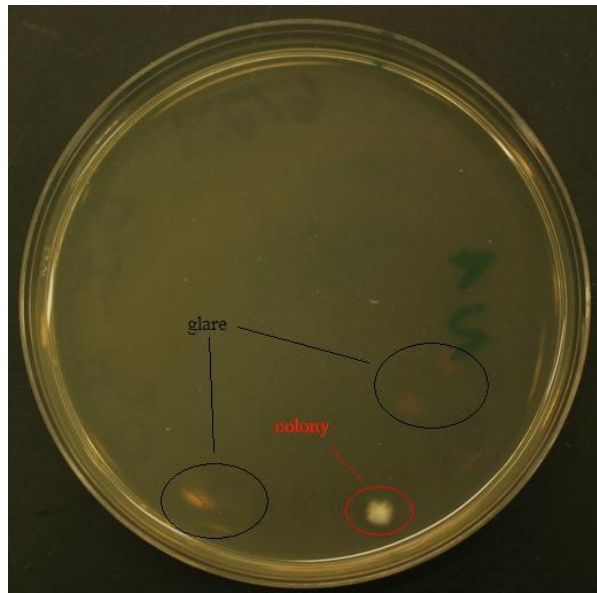
Progress

- Lab testing
 - Chemical and bacterial testing (in process)
- Survey
 - Sample of 68 people expressed interest in the product
- Prototype
 - Developed a prototype for measuring and collecting condensate

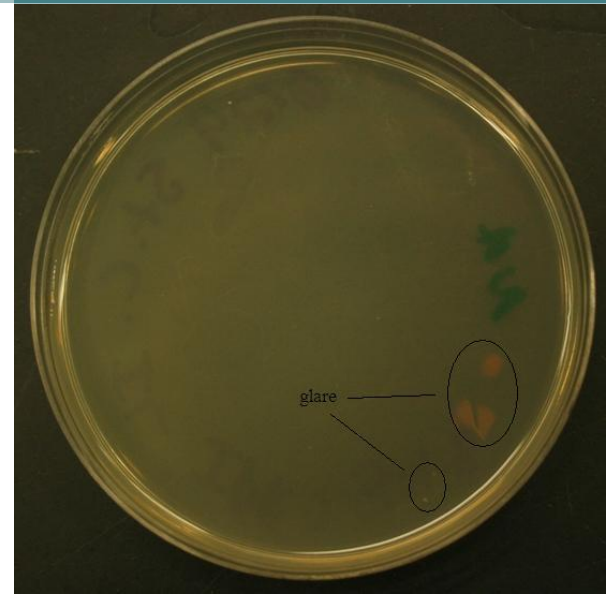
Lab & Data Collection Results



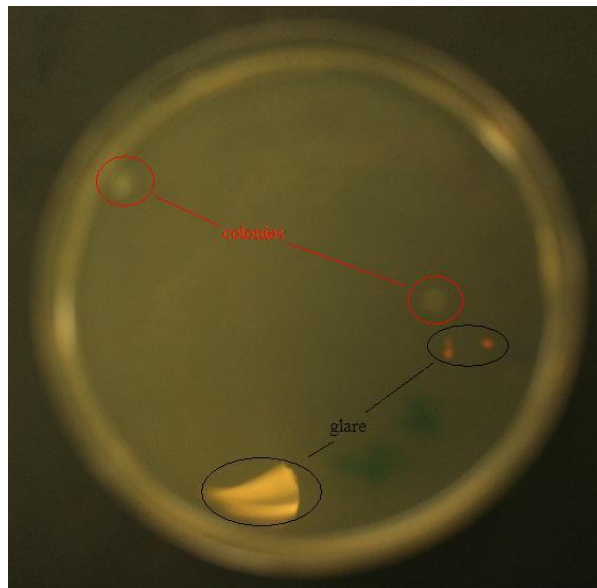
Sample	Presence of Bacteria	Number of Colonies
Apple Valley, MN	no	0
Country Club Hills, IL	yes	2
St. Charles, IL	no	0
Distilled Water (Control)	yes	1



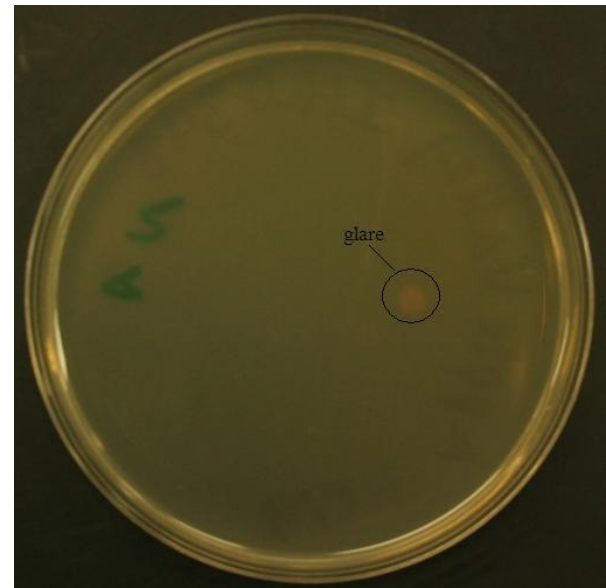
Control



St. Charles, IL



Country Club Hills, IL



Apple Valley, MN

Survey






5. Are you currently recycling your A/C condensate?

 [Create Chart](#)

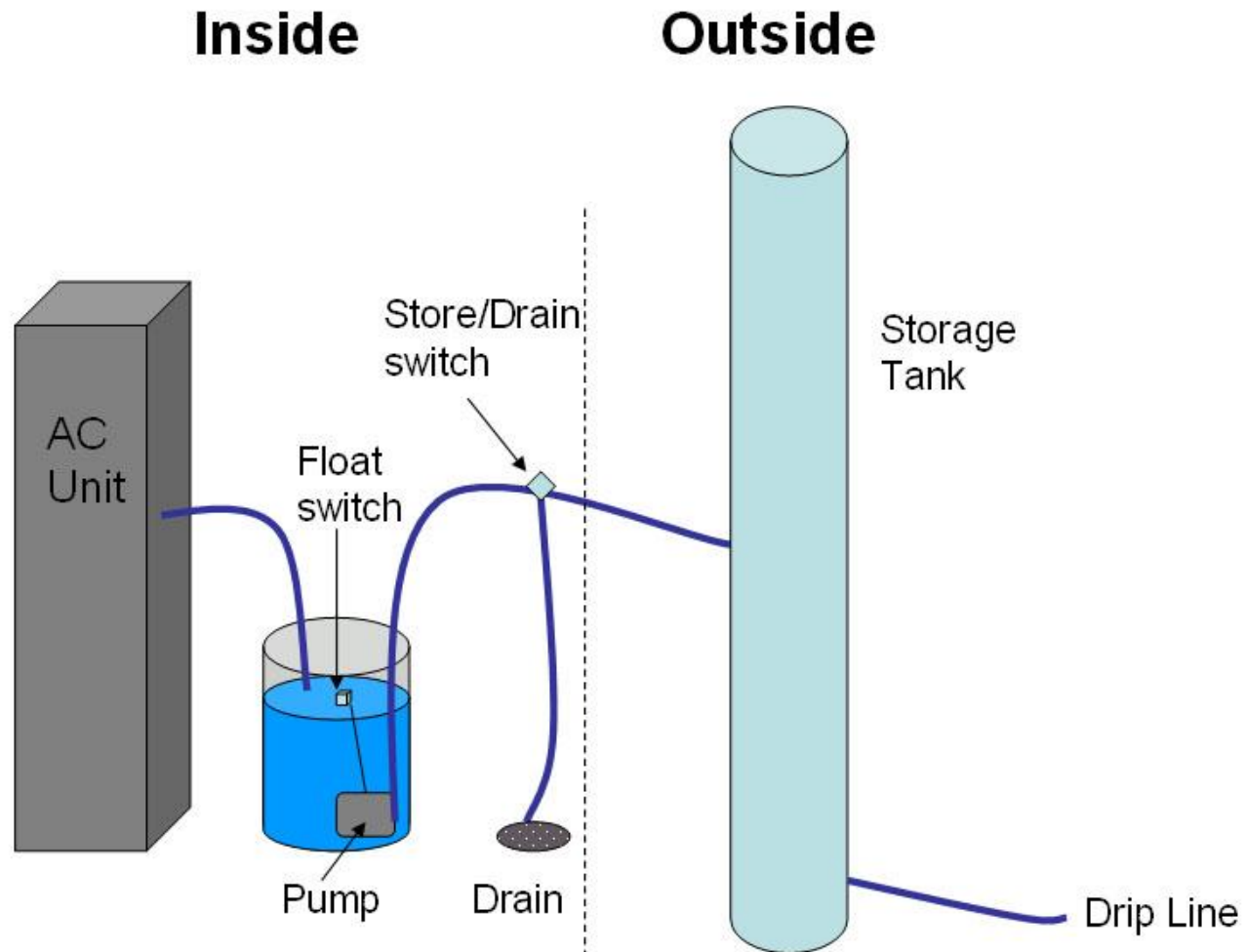
		Response Percent
Yes		1.4%
No		98.6%

8. When developed, would you be interested in purchasing a system to recycle your A/C condensate for irrigation purposes or flushing your toilets?

 [Create Chart](#)

		Response Percent
Yes		91.3%
No		10.1%

Product Prototype



Obstacles faced and Resolutions



- Collection/testing of condensate

Solution: Get test sites from volunteers and carry out lab tests

- Researching the market

Solution: Conduct a survey and research existing applications

- Coming up with uses/applications for the condensate

Solution: Class discussion and contact of water companies

- Ethical Issues

Solution: Extensive research and collection of own data

Anticipated Challenges



- Cost (\$1.89/750 gallons)

Solution: In progress

- Municipal Plumbing Code

Solution: Focus on outdoor applications

- Seasonal Aspects related to Testing/Data Collection

Solution: Open



Questions/Needs

- Please help us by filling out our [Survey](#).

“Every drop counts.”