



**CALIFORNIA STATE SCIENCE FAIR
2014 PROJECT SUMMARY**

Name(s) Nathaniel B. Tweed	Project Number 34282
Project Title Clean Water for a Thirsty Third World 2	
Abstract Objectives/Goals In my experiment my goal was to find out if solar ovens are more reliable and more cost effective than other pasteurization methods. Methods/Materials My method was to make four solar ovens that are exactly the same and put four water bottles full of water in each solar oven. Each 16 ounce water bottle was painted black in a different way. One bottle was all black, the 2nd bottle had the bottom half black, the 3rd bottle had the top half black, and the last one was clear. I put 16 ounces of water in each one, and placed them in their own solar oven. I took the temperature of each bottle every 30 minutes, and waited to see which one would reach 160°F first. Results My results are that the bottle that was all black reached a max temperature of 166°F, the top half bottle reached 139°F, the bottle half bottle reached 151°F, and the clear bottle hit 131°F. The weather temperature hit a max of 71°F. Conclusions/Discussion These results show that the all black bottle and the bottom half black would work in a third world country. It also shows that this method can be used almost year round in third world countries. In weather of 66°F the all black bottle reached 166°F. This method should be used instead of purification pills. The solar ovens are easy to make and are more cost effective.	
Summary Statement To prove that solar pasteurization is more cost effective and reliable than other pasteurization methods.	
Help Received	