



**CALIFORNIA STATE SCIENCE FAIR
2009 PROJECT SUMMARY**

Name(s) Sarah M. Douglas	Project Number J1015
Project Title Electrical Oceans: The Power of the Future	
Abstract Objectives/Goals The objective of this experiment is to find out if sea water can be used in a water drop electrostatic generator to create electricity, therefore providing an alternate energy source. Methods/Materials Firstly, a generator was built. Then, testing was done by recording the time it took for the generator to produce 5 sparks for different amounts of salt added to water, starting with distilled water and tap water, then increasing the salinity by increments of 1/4 teaspoon up through 2 1/4 teaspoons, which is the salinity of ocean water. Then, 5 different ocean waters were tested. During each test, the humidities were also recorded, as it was found from previous research that humidity has an affect on the efficiency of the generator. Results It was found that the generator is capable of producing energy using ocean water. Also, ocean water is more efficient than plain salt water at the same salinity. However, any salinity (above distilled water) was found to have little to no effect on the generator, whereas humidity was found to have an enormous effect. Conclusions/Discussion The main conclusion is that weather affects the generator more than the salinity of water does. Secondly, it was concluded that the hypothesis was incorrect. This was concluded because the hypothesis stated that as the salinity of water increases, the effectiveness of the electrostatic generator will first increase then become ineffective. However, the results show that the generator worked until the saturation point of water with salt, so it did not become ineffective. Lastly, it was concluded that the generator is not reliable as an alternate energy source because, although the generator is capable of producing energy using sea water, it is unpredictable due to other factors.	
Summary Statement My project is testing to find whether a waterdrop electrostatic generator can produce electricity with sea water.	
Help Received Mother helped mix water; Father supervised building; Richard Morrow (mentor) advised during project.	