



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Laurel M. Silberman	Project Number J1836
Project Title Chlorine vs. Saline Water Systems: Pool Water Quality	
Abstract Objectives/Goals The purpose of this project is to determine whether new saline pool systems are as effective at eliminating microorganisms as the conventional chlorine systems. I hypothesized that more bacteria would be found in the water treated with salt-chlorination than in the water treated with conventional chlorination because of the difference in the water's chlorine levels. Methods/Materials I collected samples from ten different pools, six of which used conventional chlorine and four that used salt-chlorination. Samples were collected in empty purified water bottles and placed in a refrigerator. After intervals of one and two days, I tested the samples for bacteria. I sterilized the work area and materials with alcohol. I labeled twenty Petri dishes in order to test two water samples from each pool. I pipetted approximately three milliliters of the water from each pool into Coliscan Easygel, inverted the mixture once, swirled it around, and then poured it into a Petri dish. The plates were sealed and incubated. I then observed the plates after 24 hours, 48 hours, and finally at 72 hours. I tested each water sample for pH, free available chlorine, total chlorine, total alkalinity, and total hardness stabilizer. Results After a 72-hour incubation period, all samples still, to my astonishment, had no visible colonies! In addition, the free chlorine levels were all at or above the recommended one to three parts per million. Conclusions/Discussion The results of this experiment indicate that both conventional chlorine and salt-chlorination are effective in eliminating bacteria, with no significant difference in efficacy.	
Summary Statement I tested for the difference in microorganisms in pool water treated with conventional chlorine versus saline pool systems and found no difference in bacteria level.	
Help Received Step-mom drove me to different houses and took pictures of me while I was testing; Science teacher helped me to acquire the Coliscan Easygel media and supervised me in her science lab; Mom and friend assisted with cutting out things for my board; Dad found an article that was relevant to my project.	