



**CALIFORNIA STATE SCIENCE FAIR
2012 PROJECT SUMMARY**

Name(s) Adam R. Clark	Project Number J1004
Project Title The Effect of Magnetism on Mineral Deposition	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals In this project, The Effect of Magnetism on Mineral Deposition, it was hoped that a family-friendly, environmentally conscientious alternative form of water treatment would be found. It was hypothesized that magnetic water treatment would produce fewer water spots than other, more traditional forms of treating water. Additionally, it was hypothesized that environmentally-destructive chemicals are not necessary to rid surfaces of water spots.</p> <p>Methods/Materials In this study, 10.4 gallons of water was used. Magnets and a water filter were used to produce magnetically treated water and filtered water, respectively. A third portion of water totaling 2.6 gallons was softened water, and the remaining amount was used in the tap water segment. The water ran onto a small sheet of glass, divided into four sections by strips of caulking. The water was contained in milk jugs until it was time for testing, when the water was placed into 16.9 fl. oz. water bottles. The bottles were supported by a frame of 2x4s which were screwed together. To pour the water into the bottles, a funnel was used, and to collect data, a pen was used to write in a notebook the results of that day and/or the total of the counting period. This period consisted of four tests, and there were five periods in this test.</p> <p>Results After this study was complete, it was determined that magnetic water treatment is the best when it comes to producing the fewest water spots because it only produced 205, and traditional filtering was the worst since it produced 1810. Softened water was third with 730, and tap water was second, with a total of 304 spots.</p> <p>Conclusions/Discussion Magnetically treated water produces fewer water spots than conventional methods. However, it should be noted that magnetism only affects the mineral molecules, so any potential toxins might still remain. Softening and filtering do reduce foreign contaminants, but they are less aesthetically appealing than magnetic water treatment. Tap water is somewhat pleasing, but no alterations are made at all, so the risk of poisoning is higher. Also, softening may be harmful to people who are restricted to low sodium diets. It is also harmful to the environment in the long run. Traditional water softeners may also be harmful to septic systems, as they may disrupt the chemical balance needed to effectively treat and break down waste.</p>	
Summary Statement My project is about the effect of using magnetism as an alternative method to treating water to reduce the amount of hard water deposits on glass.	
Help Received Father helped me build the apparatus; mother helped me center the project on the board	