



**CALIFORNIA STATE SCIENCE FAIR
2013 PROJECT SUMMARY**

Name(s) Grace E. Ochs	Project Number J0808
Project Title Investigating Various Degrees of Colloidal Suspended Particles on the Spread of Chemical Pollution in Water	
Objectives/Goals The objective of my project is to determine the rate that chemicals travel through colloidal suspended particles in water. I will investigate which soil sample allows chemicals to travel through its varied amounts of colloidal suspended particles fastest. This investigation will give us a better understanding of how fast chemicals travel through our waters.	
Abstract Methods/Materials Collect samples of different soils from lakes and beaches to determine the distance and time it takes for one drop of food coloring to travel and/or cloud up the water. Measure 50 mL of the soil into a 500 mL graduated cylinder. Measure 100 mL of distilled water into the same cylinder. Place two drops of red food coloring in the graduated cylinder. Start a stop watch to see how fast the food coloring travels and stop it once the food coloring reaches the soil. Record data and repeat, 10 trials.	
Results The results of my investigation indicate that beach soil allows the flow of chemicals more than lake soils. Both beach soils allowed the food coloring to travel quickly through the colloidal suspended particles. However, the lake soils only traveled an average of seventy-nine mL in two minutes.	
Conclusions/Discussion After completing my investigation on the various degrees of colloidal suspended particles on the spread of chemical pollution in water, I found that my hypothesis for Ensenada soil blocking the dispersion of chemicals was incorrect. My hypothesis stated that Ensenada soil will block the red food coloring from traveling through the soil. When compared to Catalina Island, Pine Flat, and Millerton Lake soil it allowed the chemical to travel through the water 100 mL with an average of 4.13 seconds. The soil that took the longest to let the red food coloring travel through the water was Millerton Lake soil. It took 2 minutes for the food die to travel approximately 60 mL. Millerton Lake soil took the longest to travel through water clouded with colloidal suspended particles; therefore we can infer that less of the water in Millerton Lake is polluted. People should be aware of the amount of chemicals in water they get into especially if they have skin problems and to prevent allergic reactions to spread chemicals in certain waters. In conclusion I learned that Millerton Lake will not have as vast spread of pollution as the other samples.	
Summary Statement This project investigated various amounts of colloidal suspended particles on the spread of chemical pollution in water.	
Help Received Parents helped with proofreading, layout of board, and abstract.	