



**CALIFORNIA STATE SCIENCE FAIR
2010 PROJECT SUMMARY**

Name(s) Alex Zivkovic	Project Number S0839
Project Title The Effects of Rainfall on the Composition of Creek Water and the Correlation Between These Effects and Lining Soil Comp	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals My objective was to see how rainfall affects creek water. The project also tests how soil impacted these changes.</p> <p>Methods/Materials Water testing supplies that test pH, water hardness, nitrate, nitrite, phosphate and iron, as well as soil testing supplies that test pH, phosphate, and nitrogen are required for this experiment. Three soil and three water samples were collected from two locations. Two creeks were selected to collect samples from; the Muddy Canyon Creek (Location A), which passes through a state park, and the other, the San Diego Creek (Location B), passes through an urban area. First, the samples were collected from one location and tested, and then samples were collected from another location and again immediately tested. This was repeated three days before rainfall, during rainfall, and three days after rainfall. Water and air temperatures were taken to ensure that the samples were collected under similar conditions.</p> <p>Results The bacterial levels rose by about 1500 colonies in location B. The pH dropped in both locations during rainfall by nearly 1. Nitrate, nitrite, and iron levels changed without following any fixed pattern. Phosphate levels in both locations dropped to about 10 parts per million (ppm) after the first rainfall, rising again in only location B. The water hardness in location A dropped to 125 ppm, while in location B, it remained at 500 ppm throughout the entire experiment.</p> <p>Conclusions/Discussion Differences in the trends of the water hardness and the levels of phosphate may be attributed to the type of soil present, with the finer soil particles remaining suspended. Finer soil had a greater impact upon water quality than coarser soil, since it remained suspended in the water, instead of settling to the bottom as the others did. Both rainwater and soil affect the quality of creek water.</p>	
Summary Statement This project tests the effects of both rainwater and soil on creek water during and after rainfall.	
Help Received My parents paid for the supplies that I ordered and drove me to the creek locations whenever necessary for my experiment.	