



**CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY**

Name(s) Rosalind N. Cox	Project Number S0803
Project Title The Teichert Ponds: Chico's Dirty Little Secret	
Objectives/Goals The basis of this project was to determine if runoff pollution entering the Chico Teichert Ponds (a city owned storm water/runoff holding facility), as proven in last years project, was migrating into an adjacent freshwater seasonal creek, Little Chico Creek.	
Abstract Methods/Materials I tested water from 5 sites in the Teichert Ponds and Little Chico Creek using the LaMotte Water Pollution Detection Outfit-Model AM-21. Site 1 was in the inlet ditch into which the water from the storm drains flows into the ponds. Site 2 was on the west side of the south pond. Site 3 was at the north end of the ponds where the water flows into L. Chico Creek. Site 4 was located in L. Chico Creek above where the water enters from the ponds through an open storm drain. Site 5 was also in L. Chico Creek below where the water from the ponds flows into the creek. I also collected benthic organisms using a dip net at Sites 4 (above) and 5 (below) in L. Chico Creek to test for long term or previous pollution. All dissolved oxygen tests were run in the field; all other tests in my kitchen.	
Results Pollutants were found in the Teichert Ponds at Site 1, but not in L. Chico Creek. Nitrate was present in all water tests as shown in tables and graphs, Samples A, B, and C in conc. of 1-3 ppm. Ammonia Nitrogen was found in Samples B and C in a conc. of 0.5 ppm. Chloride was present in Sample B at a conc. of 1.0 ppm. Phosphate was present in Sample C at a conc. of 1.0 ppm. Dissolved Oxygen, which is not a pollutant, was found at all Sites, 1-5, and all Samples, A-C, at a constant conc. of 4.0 ppm. The pH, which can be an indicator of pollution, was found at 7.0 at all Sites, 1-5, and in all Samples, A-C. The pH was neutral, which does not indicate pollution. There was no significant difference in benthic organisms between Sites 4 and 5 as total numbers of organisms were within 10% of each other.	
Conclusions/Discussion The final analysis indicated that pollution migration had not occurred as both short term and long term pollution was not evident in L. Chico Creek as determined by water analysis and benthic organism analysis respectively. This may prove otherwise through further testing in the warmer months when waters become more concentrated and more pesticides and fertilizers are used. Although no significant pollution was found at this time, I think it would be worthwhile to see if past pollution has entered and accumulated in the food chain.	
Summary Statement This study focuses on identification of possible pollution migration, the first step in developing a solution to the ongoing pollution problem, from the Chico Teichert Ponds, a storm water/runoff holding facility, into a freshwater creek.	
Help Received Dr. Donald Miller of CSU, Chico helped me identify a type of benthic organism, the midge larva (pupa). My Dad drove me to the Teichert Ponds and Little Chico Creek so that I could collect samples, as well as to CSU, Chico, to see Dr. Miller. He also helped me with my backboards.	