



**CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY**

Name(s) Theresa J. Hannig	Project Number J0815
Project Title From Your John to the School Lawn: Is Recycled Water Really Safe?	
Abstract Objectives/Goals Purpose: Does watering with recycled water affect the safety of school lawns? Hypothesis: I think that watering with recycled water does not affect the safety of school lawns. Methods/Materials I grew three patches of lawn in three separate miniature greenhouses using plastic boxes, chicken wire, and clear plastic trash bags. I watered one with recycled water, one with distilled water, and the other container with tap water. I measured their growth rate and compared the appearances of the grass patches in each container. I collected water runoff samples and tested each for pathogens, nutrients, and other characteristics. Results The recycled water patch grew faster, looked better, had a lower pathogen level, and higher nutrient level than the tap or distilled water patches. None of the runoff samples had residual chlorine. Conclusions/Discussion Conclusion: My hypothesis is partially correct. The recycled water did not affect the lawn in a bad way, but instead affected it in good way. The lawn that was watered with recycled water grew the fastest, had the lowest pathogen levels, one of the best appearances, and the highest nutrient level. Recycled water is extremely safe and actually better for irrigation use than other sources because its residual chlorination kills pathogens and its residual nutrients from our waste created healthier grass. Practical Application: Recycled water could be used as a new local water source. By recycling wastewater, instead of discharging it into the marine environment we can conserve tap water and decrease water contamination.	
Summary Statement I tested the effect of recycled water on the safety of school lawns and found that recycled water improves grass growth and health without increasing pathogen levels.	
Help Received My parents gave me lots of helpful suggestions. Ken Kaufman at South Bayside System Authority (SBSA) gave information and suggestions. Calleen Wilcox-Hanlon, Water Quality Specialist at the SBSA, did the lab testing. Kathy Suter, the lab director at the SBSA, explained the pathogen test.	