



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Justo R. Padron, III	Project Number J1030
Project Title Investigating the Water Quality of Dairy Farm Water	
Abstract Objectives/Goals With recent news report of E-Coli outbreak contamination of our farm crops, I wanted to investigate the effects of dairy farm animal waste would have in our ground water supply. My objective was to determine the amount of E-Coil and other contaminants would be found in our ground water caused by the animal waste at the various dairy farms tested. Methods/Materials Water samples were taken from five dairy farms from Fresno, Tulare, Kings, and Kern Counties. The water samples were then tested for the following contaminates: E-Coli, nitrate, nitrite, copper, chlorine, pH, iron, alkalinity, and water hardness. Each water sample was performed a minimum of three (3) times and an average was then recorded. For the E-Coli test, water samples were poured into a Medium Solution and the poured into a sterile Petri Dish. The samples were then incubated for a period of 48 hours at a constant temperature of 75 degrees. Using a test kit obtained from PureTest for well waters performed the other contaminant test. Each test samples was performed a minimum of three (3) times and then they average was then recorded. Results All water samples tested positive for contamination and in many cases exceeded the EPA Standards for potable water. Water samples tested for chlorine, Iron, nitrates and ammonia all tested negative. Water samples tested for pH had slight traces of pH contamination. Water samples tested for Nitrate and Hardness tested positive with high levels of contamination. Water tested for Alkalinity all tested positive with extremely high levels of Alkalinity contamination. Water samples tested for E-Coli bacteria growth, four (4) of the five (5) dairies tested had extreme high levels of E-Coli colony contamination while one (1) only had a slight colony contamination growth. Conclusions/Discussion The results of the test performed, each water sample tested positive but in various digress of contamination. All water samples exceed the EPA Standards for potable water. Four of the five dairies tested had extremely high levels of E-Coli colonies. My project confirms that animal waste does have an adverse effect on the quality of our ground water and may contribute to some of the E-Coli outbreaks reported in the past years that were found in the farm products produced.	
Summary Statement The focus of my project was to determine the effects of animal waste would have on our underground water quality and supply.	
Help Received My mother helped type the report; my father helped with the graphics and WS Printing printed my project sign.	