



**CALIFORNIA STATE SCIENCE FAIR  
2007 PROJECT SUMMARY**

<b>Name(s)</b> Navi S. Dhaliwal	<b>Project Number</b> <b>J1413</b>
<b>Project Title</b> <b>How Safe Is Your Water?</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> Objective of my science project was to find out the level of total coliform bacteria, E. Coli bacteria, chlorine, heterotrophic plate count (HPC) in various drinking water samples, and based on the results determine about safety of drinking water from these different locations.</p> <p><b>Methods/Materials</b> Methods: Testing of Chlorine residual in water samples using Hach Colorimeter method; Testing of Coliform bacteria in drinking water samples using Quanti-Tray method; Heterotrophic Plate Count (HPC) in Colony Forming Units per milli liter (CFU/mL) using Petri dishes.</p> <p>Materials: 125-mL bacteria testing sterilized bottles with sodium thiosulphate tablets, Chlorine Testing Kit, Ice Cooler, UV Lamp, Incubator, Colilert P/A Reagent, Liquid Agar for HPC Testing, Petri dishes sterilized, Quanti-Tray Sealer, Quanti-Tray 97 Wells, HPC Colony Counter, Thermometer, and Water Samples</p> <p><b>Results</b> All five samples (Bottled Water, Kitchen Snk Tap Water, City Park Drinking Fountain Water, Fast Food Restaurant Water and Dine-in Restaurant Water) tested negative for total coliform bacteria.</p> <p>Chlorine residual in five water samples ranged from 0 to 2.4 mg/L with the highest value in the kitchen tap water and City Park Drinking Fountain Water.</p> <p>Average HPC values in five water samples ranged from 1 to 86 CFU/mL with the highest value in the Fast Food Restaurant Water.</p> <p><b>Conclusions/Discussion</b> All five water samples tested negative for total coliform bacteria and E.coli bacteria and considered safe for drinking based on testing of bacteriological quality.</p> <p>Fast food restaurant water had the highest average HPC value of 86 CFU/mL possibly due to growth of HPC bacteria in the filter indicating need for changing the water filter cartridge.</p> <p>There was no clear relationship between total coliform bacteria and average HPC level in the water samples .</p>	
<b>Summary Statement</b> My project is about determining safety of drinking water from various locations and testing for chlorine residual, total coliform bacteria and E.coli bacteria, and heterotrophic plate count (HPC).	
<b>Help Received</b> Transportation for collecting water samples from different locations in Bakersfield and delivery to laboratory, analysis of water samples by McRay Laboratory in Bakersfield, parents' help in proof reading of project documents , review of graphs, charts, and tables, cutting and pasting on the display board	