The purpose of this experiment is to determine how a river’s health is being changed due to pollution. This project involves testing two areas on Cottonwood Creek to ascertain which area was more polluted, which type of trash is present in each area, and what is the greatest contributor to the health of the river. Two areas of the river were picked based on their surrounding environment: industrial and residential. The parameters of pH, flow, air temperature and water temperature were checked to determine if the areas were similar. All the trash was collected over an equal amount of area. A sample of water from each location was grown on two different agars and counted for colonies. The trash at each site was separated by material, weighed and then charted. My experiment was repeated over several months so a pattern could be established. Measurements of the river’s characteristics were comparable at both locations. The industrial site had 68% more gram negative bacteria colonies, and 16% more trash than the residential location. The residential area had more plastic, aluminum, and sport balls which appeared to come from the park and houses. The industrial area had more glass, Styrofoam, and clothing items which came from the business and warehouses. These materials were then used to determine which supported the most gram negative bacteria. My research and these findings lead me to believe that the amount and type of pollution affect the quality of the stream.