OFFICIAL ABSTRACT and CERTIFICATION

Assessing the Contaminants in Drinking Water

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For distribution to consumers, the U.S. Environmental Protection Agency (EPA) defines standards for drinking water to meet, ensuring it does not contain an excess of hazardous contaminants. Much of the water consumed across the U.S. has been found to violate these standards (Langin et al., 2018). This study aimed to assess the contaminants prevalent in bottled and Long Island tap water, predicting that results would remain consistent with researchers as stated in Daughton, 2004. The researcher found much success using a LaMotte colorimeter with water quality test kits to determine the presence of Sulfate, Fluoride, Copper, Zinc, Manganese, Nitrate, Iron, and Chlorine in local and bottled water sources. For every test conducted, at least one water source violated the EPA safe standard. Additionally, LaMotte biopaddles were used to test for the presence of coliform bacteria. After repeated trials, it was found that Fiji bottled water was contaminated with 104 colony forming units of fecal coliform bacteria. Overall, this experiment found that Brita and school filtered tap water, as well as Poland Spring bottled water were the only water sources that did not violate any EPA standards. The prevalence of this issue in America poses a threat to public health, as excess amounts of: Iron can lead to hemochromatosis- which can damage the liver, heart, and pancreas; Copper can result in vomiting, diarrhea, stomach cramps, nausea, liver damage, and kidney disease; Fluoride can cause dental and skeletal fluorosis; and coliform bacteria can lead to diarrhea, nausea, headaches and fatigue.

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