

## **Abstract:**

Water samples from eighteen different sources in Nairobi were analyzed for coliform and *E. coli* content using three microbiological techniques, namely: Multiple tube or Most Probable Number (MPN) technique, Defined Substrate Technique (DST) or Colilert technique and Petrifilm(TM) Plate Count Techniques. All the three techniques detected coliforms in water samples contaminated by these organisms. However, the Colilert and Petrifilm Plate techniques were superior to the multiple tube technique in differential detection and enumeration of coliforms and *E. coli*. Overall, the Petrifilm Plate technique was the most sensitive of the three methods as it was able to detect as few as one *E. coli* cell per 100 ml of the water samples. Of the 18 different water sources tested, Nairobi River, Nairobi dam, Kabete dam, and Kawangware stream had very high numbers of coliform bacteria and *E. coli*. The level of contamination in Nairobi River varied with the sampling site. Coliforms and *E. coli* levels were highest in Nairobi River water samples obtained near Chiromo and Arboretum areas, and lowest in samples obtained at the museum hill area. Chunga River along Ngong road and Mbagathi River had moderately high levels of coliforms and *E. coli*, and the levels of contamination were still way too high above the World Health Organization (WHO) recommended levels for safe drinking water. All the borehole water samples tested had no coliforms and *E. coli* except for those in Kenya Wildlife Services (KWS) and Kenya Commercial bank (KCB) training center, which had low counts of these organisms. None of the tap water samples and commercial bottled water samples tested had coliforms or *E. coli*.