Research on Eutrophication of Nairobi Dam, Kenya and its tributaries has revealed fair negative correlation between Dissolved Oxygen (DO) and Total Dissolved Solids (TDS) Contents (y = -24.562x + 622.28, R2= 0.6835). This indicated that, sampling sites with low dissolved oxygen had high TDS, while those with high DO had low TDS. When the levels of these parameters in the aquatic environment studied were compared with other eutrophic aquatic systems of the world, it was found to be highly eutrophic. Thus, any of these two parameters could be used as an index of Eutrophication in a given water body suspected to exhibit Eutrophic activity.In the current study, it had been postulated that the major source of eutrophication could have been disposal of untreated raw sewage and use of phosphorous-containing surfactants.