**WATER QUALITY IMPROVEMENTS USING DIFFERENT FILTER METHODS**

**ABSTRACT**

 Water is essential to the survival of humans and the planet. Yet over one-sixth of the world’s population (7.114 billion people) currently lacks access to safe water, about one in nine people in the world Each year, water-related diseases claim the lives of 3.575 million people, Clean water as being a prime concern in many communities of developing countries. Contaminated water plays a significant role in taking numerous lives in these localities, for which a number of efforts are being made for accessing the safe purified drinking water. Fortunately, efficient and cheap water purification systems are being utilized and being tried to be accessed worldwide for easy access to clean water. Most of the time when we speak of water quality, we only refer to surface water quality. Many people depend on well water from underground aquifers. Therefore, ground water quality is a concern, as well. Fortunately, soil acts as a filter. Soil can filter heavy metals, as well as organic and inorganic pollutants. In order to address these filtration system can be used types of soil locally available in the alluvial region , tested in order to determine what chemical reactions may have taken place to alter the filtrate concentrations. The acceptable levels of the tested contaminates in drinking water. Then determine if filter materials are enough or do extra measures need to be taken. These filter materials can be made from locally available materials and are relatively inexpensive. These materials act by physically removing particles from the solution. Its ability to remove disease-causing bacteria and parasites from contaminated water. For these reasons, filtration material appears to be a viable method of point-of-use water treatment. The goal of this research is to assess the performance of filter materials that are locally available in alluvial region . These filter materials will be evaluated based on the following parameters: flow rate, turbidity removal, bacterial removal, and cost. The suitable filter material that performs the best at removing bacteria will also be tested for viral removal. Results from this study will lead to recommendations regarding the best-performing filter materials