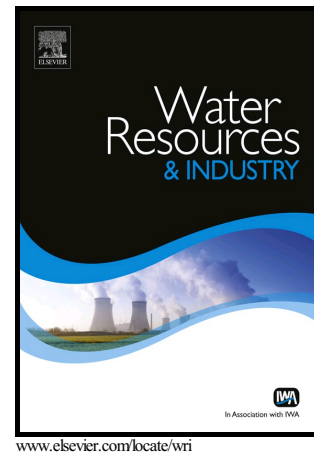


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**Water Quality Assessment of Bitumen polluted Oluwa River, South-Western Nigeria**

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**Abstract**

This study was aimed at establishing a water quality database in the study area where none existed previously. Samples were taken from two different sites of River Oluwa, South-Western Nigeria. Physicochemical and biological factors and the metals for one year (April, 2011 to March, 2012) were evaluated using standard methods. All the physical parameters of the water samples from the two sampling Sites did not show deviations from Nigeria Industrial Standard (NIS) for permissible levels of these parameters in drinking water. Virtually all heavy metals investigated deviated from the permissible levels allowed by NIS, and WHO standards in drinking water. In the same vein, all chemical parameters investigated during the dry season was significantly different from rainy season except for BOD at  $P < 0.05$ . Isolated microorganisms include members of the genera *Bacillus*, *Micrococcus*, *Pseudomonas*, *Streptococcus*, *Proteus* and *Staphylococcus*. The public health implications of consuming water from this river are fully discussed.

**Keywords:** Bitumen, Drinking water, Health, Nigeria, Pollution, Standards

**1. Introduction**

One of the globally recognized health-related programs and campaigns is the provision of potable and safe water especially in rural communities [1] due to the important roles play by water in supporting life and wellness [2-7]. It has been reported an estimated 1.1 billion people do not have access to adequate and uninterrupted water supplies which has been linked to about 4 billion diarrhea outbreak and well over 5 million annual global deaths [8,9]. Researchers have reported the major causes of these shortfalls in clean water supplies to be improper management, the upsurge in industrial developments and its attendant pollution menace, alarming population growth, unfavorable policy implementation of water-related projects. All these factors are also known to adversely affect the provision, availability, distribution, access, and quality of water and allied resources [10,11].

One of the yet to be achieved Millennium Development Goals (MDGs) set by the United Nations (UN) is to halve the number of people without access to improved water sources by

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