

**PHYSICO-CHEMICAL ASSESSMENT OF THE
GROUNDWATER IN BARANGAY MOHON,
AREVALO DISTRICT, ILOILO CITY**

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ABSTRACT

Water analysis determines the stability and reliability of natural water sources. Determining the physical and chemical compositions of water would indicate its safety for use and consumption. In this scientific study, water analysis was conducted to evaluate the quality of potable water from eight water pumps, commonly used for drinking, in Brgy. Mohon, Arevalo District, Iloilo City. Aside from drinking, most residents also used these groundwater sources for cooking, bathing, washing, and laundry purposes. The parameters tested were pH, temperature, alkalinity, phosphate, nitrite, dissolved oxygen, and heavy metals (e.g., lead, copper, and cadmium) content. The analyses were conducted from February to April with same time of collection (9:00 am-12:00 nn) and the samples were stored under dark and cold conditions (4 °C). During the analyses, the following methods were used: titrimetric for alkalinity and dissolved oxygen content, colorimetric and UV/Vis spectrophotometry for phosphate and nitrite-nitrogen, and atomic absorption spectroscopy (AAS) for heavy metals. Results showed that all sampling sites were determined to have alkaline waters (7.29-7.77), because of the high pH and alkalinity values. Also, it was found that the water sources contained very high phosphate levels (0.54-1.29 mg/L PO₄-P) that contributed to very low DO levels (0.12-0.14 mg/L DO). Other parameters, such as nitrite-nitrogen and heavy metal determinations showed no significant difference based on the standard limits set by different environmental institutions.

Keywords: water analysis, groundwater, heavy metals, UV/Vis spectrophotometry, AA Spectroscopy