

## **ABSTRACT**

This study goals to assess the concentrations of specified Heavy Metals (HMs) and quality of taps drinking water of Ramadi city, western Iraq. Heavy Metal Pollution Indices like heavy metal pollution index (HMPI ), heavy metal evaluation index (HMEI) and contamination degree (CD) were applied to assess the supplied water. The average concentrations of Lead (Pb), Nickel (Ni), Chromium (Cr), Arsenic (As) and Cadmium (Cd) in most stations exceed the maximum admissible concentration, while Iron (Fe) in most of stations was within the maximum admissible concentration according to local and global guidelines. (HMPI ) values of most stations were exceed the maximum critical value of 100. (HMEI) values of most stations were exceed the value of 10 recommended for drinking water. (CD) values of most stations were exceed the value of 1 recommended for drinking water. The pollution origins were assessed using principal component analysis (PCA) and clustering analysis (CA). The results indicate that contamination comes from anthropogenic causes being the most common and lithogenic sources being the least common. The present concentration of (HMs) in taps water is causing health and environmental problems, water with high (HMs) concentrations would need to be treated before being supplied to consumers.