



## Indices of Exchangeable Heavy Metals Pollution in Shatt Al-Arab Estuary – Part 1

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**Abstract** This work was carried out to monitoring of Shatt Al-Arab river pollution by assessing the degree of exchangeable heavy metals pollution (Pb, Ni, Cu, Cr, Zn, Co, Cd and Fe) in the sediment samples by using Flame Atomic Absorption Spectrophotometer (FAAS) for sediment core at six stations along Shatt Al-Arab estuary they are: (Al-Qurna, Al-Deer, Al-Qarma, Al-Ashar, Abu-Alkasib and Al-Fao). The degree of Pollution in the sediments had been evaluated by using Contamination factor (CF), Enrichment factor (EF), Geo accumulation index (I-geo), pollution load index (PLI), dna Anthropogenic Factor (AF).

**Keywords** Heavy metals, Exchangeable, sediment core, Shatt AL-Arab estuary

### Introduction

Heavy Metal is an imprecise term generally taken to include the metallic Metals with an atomic weight greater than 40, which have specific gravity greater than 5 g/cm<sup>3</sup>. The investigation in Heavy metals pollution is very important in Basrah city due to petroleum production and other activities in this region. The industrial effluents (liquids or solids) that are discharged to the surface or sea waters are the main reason behind water pollution. The control of such pollution problems in the aquatic environment is very difficult because of the large number of input sources and their geographic dispersions. Sediments constitute a good record, and were be about the today's state and the history of contaminated area, they can provide an integrated picture about the events that occurred in the water column [1,2]. The assessment of sediment enrichment with elements can be carried out in many ways. The most common ones are the index of geo-accumulation index (I-geo), pollution load index (PLI) Enrichment factor (EF), Anthropogenic Factor (AF) and Contamination factor (CF) .



Figure 1: The study stations

