

Evaluate the ecological risk indexes soil heavy metals pollution in industrial estate

M I Sujaul, M G Salah, A M Idris, I R Noram and, H T Cheng

Faculty of Civil Engineering and Earth Resources, Universiti Malaysia Pahang,
Lebuhraya Tun Razak, 26300 Gambang Kuantan, Pahang, Malaysia

sujaul@ump.edu.my

ABSTRACT:

This study was carried out to evaluate the soil heavy metals pollution in Gebeng industrial area using reliable ecological risk indexes. The inductively coupled plasma-mass spectrometry was used to identify the concentration of selected heavy metals (As, Ba, Cd, Co, Cr, Cu, Ni, Mn, Pb, and Zn). Based on the results, the decreasing of heavy metals concentrations in the soil samples were in order as follows: Mn > Cu > Pb > As > Zn > Ba > Ni > Co > Cr > Cd. Ecological risk indexes (Geo-accumulation, Contamination Factor and Pollution Load Index) indicated that the industrial zone (IZ) was moderately to highly polluted by As, Cu, Pb, Co, Cd and Ni, whereas there was no toxic metals in the residential zone (RZ) and swampy area (SA).