

The Distribution of Heavy Metals in Surface Sediments of Sisangan Coasts-The Southern Coast of Caspian Sea

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Abstract

In this study, concentrations of some heavy metals (Hg, As, Cd, Ni, Pb and Zn) in surficial sediments from Sisangan coasts located in the southern part of the Caspian Sea were studied. Therefore, 12 stations in Sisangan coasts were selected and surface sediments were sampled from 3 points at each station using van veen grab at January 2013. Concentrations of Cd, Pb, Ni and Zn were measured by Flame Atomic Absorption Spectrophotometry and Hg levels were measured using Cold Vapor Atomic Absorption Spectrophotometry. Meanwhile, V and As Concentrations were determined by Graphite Furnace. According to the results, Vanadium had the highest concentration (141.47 µg/g dry weight) and Mercury had the lowest concentration (4 ng/g dry weight) among the studied metals. Mean concentrations of Ni, Pb, Zn, Cd and As were 27.54, 16.18, 80.31, 1.23 and 0.019 µg/g dry weight, respectively. The assessment of biological effects of heavy metal pollution in the area was done, using American and Canadian national guidelines. The results indicated levels of Cd and Ni in surface sediments were higher than the Lowest Effect Level (NOAA Guideline) and Threshold effect level (Canadian Guideline). Whereas Concentrations of other metals were lower than mentioned limits.

Keywords: *Pollution, Heavy metals, Surficial Sediments, Sisangan Coasts, Caspian Sea.*
