

Concentration and Source Identification of Pb and Cd in the Surface Sediments of Bandar-Abbas Coasts Using Sequential Extraction Technique

Bagheri, Zahra¹; Riyahi Bakhtiari, Alireza^{2*}; Bagheri, Hossein³

1- M.Sc. Student, Department of Environmental Sciences Department, Faculty of Natural Resource and Marine Science, Tarbiat Modares University, Noor, Mazandaran, Iran. Email: bagheri.zahra@rocketmail.com

2- Assistant Professor, Department of Environmental Sciences Department, Faculty of Natural Resources, Tarbiat Modares University, Noor, Mazandaran, Iran. E-mail: riyahi@modares.ac.ir

3-Iranian National Institute for Oceanography and Atmospheric Science, Tehran, Iran. Email: bagheryl@gmail.com

Received Date: July 02, 2012

*Corresponding Author

Accepted Date: June 09, 2013

© 2013 Oceanography All rights reserved.

Abstract

In this study, surface sediment samples (n=20) from Bandar Abbas were chemically analyzed to determine total concentration of lead and cadmium and their sources. The sampling was performed from two stations; Terminal of Bandar Abbas and Tourist Park of Soro, located in Hormozgan province in spring 2011. Direct Aqua Regia digestion method, sequential extraction techniques and subsequently Graphite Furnace Atomic Absorption Spectrometry (GFAAS) were used to determine total concentrations of Pb and Cd in geochemical sectors of the sediments. The results demonstrated that total concentration of Pb and Cd varied from 593.7 to 1206.2 and from 29.3 to 30.5 ng g⁻¹, respectively. The resistant fraction of total concentration was about 62.5 and 79.1 percent for Pb and 73.4 and 71.2 percent for Cd in the sediments of Terminal of Bandar Abbas and Tourist Park of Soro, respectively. It reveals that more than half of the total lead and cadmium in coastal sediments of the stations originated from natural sources. High ratio of this fraction in the sediments showed that anthropogenic sources of metal pollution in the coastal stations of the sampling areas have fewer role and elevated concentrations of the elements in this fraction is due to the higher values of them, which are occurred naturally in the earth's crust.

Keywords: *Metals source, Sediments, Sequential extraction, Bandar Abbas.*
