Characteristics of river sediment in the light of the environmental quality standard value of Japan – A case study at the Tama, the Tsurumi, the Hino and the Kamo rivers in Japan

K. WATANABE[1], A. OCHI AND I. MATSUMOTO[2]

Faculty of Education, Shimane University, Matsue, Japan
([1]e049210@matsu.shimane-u.ac.jp,
[2]chromim@edu.shimane-u.ac.jp)

Introduction

The soil contamination countermeasures law in Japan has been enforced on February 15, 2003. The responsibility of those concerned with social aspects of soil contamination management and land occupation has increased in Japan.

Our study is clarifying distinction with the natural origin and the artificial origin about the soil contamination (e,g, Matsumoto et al., 2002). And we show the geochemical and geological characteristics of stream sediments from the Tama, the Tsurumi, the Hino and the Kamo rivers, in Japan.

Results and discussion

We show research results of the degree of contamination in one of the most polluted rivers, the Tama and the Tsurumi rivers (Kanto District), the Kamo river (Shikoku District) which is very clear based on investigations of BOD, and the Hino river (San-in District) which is also relatively clear and has chromite mine at near the source. Above rivers were sampled at intervals of 2-3km over their entire stretch. The content and elution of chemical compounds was examined, and mineral composition was established by both XRD (X-Ray Diffraction) and observation under a polarization microscope.

Of the determinations of Cd, CN, Pb, Cr6+, As, and Hg only Pb content was above the environmental quality limit in one location of the Tsurumi river. However, in the down-river part Pb-concentration was 10 times higher than at the source as the result of man's production activity; for Hg the same tendency was detected at the Tama and Tsurumi rivers.

Reference

Matsumoto I., Ochi A. and Konno H., (2002), Abstract with Programs of 2002 Annual meeting of the society of Resource Geology.