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3rd Symposium on Subsoil Characterization and Remediation 3º Simpósio em Caracterização e Reabilitação do Subsolo

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FEUP



Universidade do Porto – Faculdade de Engenharia

Sala. I - 105

Áreas temáticas

- Caracterização do Subsolo
- Avaliação/Gestão de Risco
- Reabilitação Química / Biológica
- Reabilitação Física / Térmica
- Responsabilidade ambiental/ Aspectos legais

Topics

- Subsoil Characterization
- Risk Assessment Management
- Chemical / Biological Remediation
- Physical / Thermal Remediation
- Environmental liability/ Legal aspects

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ARSENIC SPATIAL DISTRIBUTION IN SOILS – THE TRANSBOUNDARY WATERSHED OF THE ÁGUEDA RIVER

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ABSTRACT

The Águeda River transboundary watershed is located in the central west of the Iberian Peninsula between Portugal and Spain. Anthropogenic activities and mineral resources (mainly sulfides and uranium minerals) occur distributed throughout the watershed. Arsenic is commonly associated with mineralization and is toxic at low levels.

A total of 135 soil samples (52 samples inside and 83 outside mine influence area) was collected in the Águeda watershed. Soils associated to mines are more acidic (pH = 5.2) than regional soils (pH = 6.1). Arsenic soil background contents range between 1 to 58 mg/kg (median = 11 mg/kg), while soils inside mine influence present the highest As content (1 – 7697 mg/kg; median = 81 mg/kg). Some soils are contaminated in As.

The spatial distribution of As' contents is mainly related to mine activities and metal enrichment of the Águeda watershed area. Soil contamination assessment is a critical point in decision-making processes, aiming to land use and water resource management optimization.

keywords: Arsenic, transboundary watershed, soil contamination, As spatial distribution

Theme: Risk Assessment Management