

## Accepted Manuscript

Quality reference values and background concentrations of potentially toxic elements in soils from the Eastern Amazon, Brazil

Antonio Rodrigues Fernandes, Edna Souza Santos, Anderson Martins de Souza Braz, Sannah Muhamad Birani, Luís Reynaldo Ferracciú Alleoni



PII: S0375-6742(18)30098-0  
DOI: doi:[10.1016/j.gexplo.2018.04.012](https://doi.org/10.1016/j.gexplo.2018.04.012)  
Reference: GEXPLO 6144

To appear in: *Journal of Geochemical Exploration*

Received date: 10 September 2016

Revised date: 9 April 2018

Accepted date: 19 April 2018

Please cite this article as: Antonio Rodrigues Fernandes, Edna Souza Santos, Anderson Martins de Souza Braz, Sannah Muhamad Birani, Luís Reynaldo Ferracciú Alleoni , Quality reference values and background concentrations of potentially toxic elements in soils from the Eastern Amazon, Brazil. The address for the corresponding author was captured as affiliation for all authors. Please check if appropriate. *Gexplo*(2017), doi:[10.1016/j.gexplo.2018.04.012](https://doi.org/10.1016/j.gexplo.2018.04.012)

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

## **Quality reference values and background concentrations of potentially toxic elements in soils from the Eastern Amazon, Brazil**

Antonio Rodrigues Fernandes<sup>1</sup>, Edna Souza Santos<sup>1</sup>, Anderson Martins de Souza Braz<sup>1</sup>,  
Sannah Muhamad Birani<sup>2</sup>, Luís Reynaldo Ferracciú Alleoni<sup>3</sup>

<sup>1</sup>Institute of Agricultural Sciences, Federal Rural University of Amazon (ICA-UFRA), C. P. 917, Belém 66077-530, PA, Brazil

<sup>2</sup>Institute of Pará Lands, Belém, 66090-270, PA, Brazil

<sup>3</sup>Department of Soil Science, College of Agriculture Luiz Queiroz, University of São Paulo (ESALQ-USP), C. P. 9, Piracicaba 13418-900, SP, Brazil

Correspondence to: Antonio Rodrigues Fernandes. Email: antonio.fernandes@ufra.edu.br

Phone number: +559132105190

### **Abstract**

Concentration quality reference value (QRV) concentrations are calculated based on the background of potentially toxic elements (PTEs) in their natural state, absent from human influences. QRVs are essential for ensuring that environmental legislation is consistent with the local conditions and they are also important for monitoring potential changes in the chemical compositions soils that can affect soil quality. The objective of this study was to obtain background concentrations to set QRVs for the PTEs in the soils of the state of Pará. The background concentrations and QRVs of the PTEs were obtained from 132 surface soils (0–0.2 m) and 132 subsurface (0.8–1.0 m) soils in the state of Pará, Eastern Amazon, Brazil. Under natural conditions, the values found for the QRVs and the background values of the PTEs were low, indicating low risk of environmental contamination and hazard to human health. The exception was Hg, whose content was higher than the prevention level defined by Brazilian law. The concentrations of Al, Cu, Cd, Cr, Fe, Hg, and Mn were positively correlated with the

Download English Version:

<https://daneshyari.com/en/article/8865958>

Download Persian Version:

<https://daneshyari.com/article/8865958>

[Daneshyari.com](https://daneshyari.com)