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**GDMEA**

Grupo de Desarrollo de Materiales y  
Estudios Ambientales

# NATURAL RADIOACTIVITY IN CLOTILDE BRIOZZO LAGOON'S SEDIMENTS AND WATER

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# OBJECTIVE AND METHODOLOGY

To make a survey of the natural radioactivity in Clotilde Briozzo Lagoon to determine the health hazard to the population in places near the Lagoon.

Sediment samples were measured by gamma-spectrometry using a High Pure Germanium Detector ORTEC GMX35P4-76-RB, 35% efficiency and 1,75 % resolution for the photopeak of  $^{60}\text{Co}$

Gross alpha and beta measurements were performed in a gas proportional Canberra LB4200 Multi-Detector Low Background Alpha/Beta Counting System



# SUMMARY OF RESULTS

- ✓ The average concentration for  $^{226}\text{Ra}$  is comparable to the worldwide mean reported by UNSCEAR
- ✓ The average concentration for  $^{232}\text{Th}$  is twice the reported by UNSCEAR, but comparable to the activity concentration for Aguas Dulces and Barra de Valizas in Uruguay
- ✓ The average annual effective dose equivalent (AEDE), is higher than the worldwide effective dose but comparable to the reported for Barra de Valizas in Uruguay
- ✓ The radium equivalent activity and the external index are below the accepted safety limit values, therefore the use of these sediments as raw materials for building does not constitute a health hazard.
- ✓ Gross alpha and beta activities indicate that drinking this water does not constitute a health hazard