

**HYDRODYNAMICS OF THE BICAZ LAKE. CONSIDERATIONS BASED ON
SELECTED MAJOR AND TRACE ELEMENTS**

NATHALIE GASSAMA¹ CONSTANTIN COCÎRȚĂ¹, HAINO UWE KASPER²

¹ Université François Rabelais - Tours, Laboratoire de Géologie des Environnements
Aquatiques continentaux, Parc de Grandmont, 37200 Tours, France

² Institut für Geologie und Mineralogie der Universität zu Köln, Zùlpicher Str. 49a,
D-50674 Köln, Deutschland

Abstract

The drainage area of the dammed Bicaz lake comprises the mining district of the Bistrița river and may act an important role in the transport of trace elements issued from polymetallic ore deposits. From July 2005 to June 2006, four surveys allow to describe and understand physical and (bio) chemical processes regulating the lake composition. In this paper, we present results on major compounds and alkali and alkaline earth trace elements in order to assess the hydrodynamics of the lake. Results evidence currents issue from the river inflow and current induced by the sluice drawing off. The lake composition originate mainly from a mixing between a lake end-member and the spring recharge. Na and Cl evidence an anthropogenic input which probably originate from the road salting. Trace elements allow to distinguish different sources (Bistrița/Bistricioara) and to estimate a transit time of waters.

Key words: Bicaz lake, alkali and alkaline earth elements, trace elements, mixing, transit time of waters

¹ e-mail: nathalie.gassama@univ-tours.fr